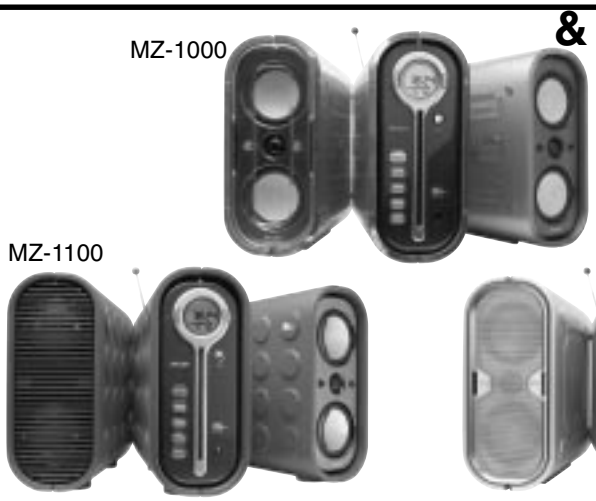
Lifestyle Micro System

MZ-1000/22 & MZ-1100/22 & MZ-1200/22

Service
Service
Service



Service Manual

COMPACT disc DIGITAL AUDIO

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CLASS 1
LASER PRODUCT

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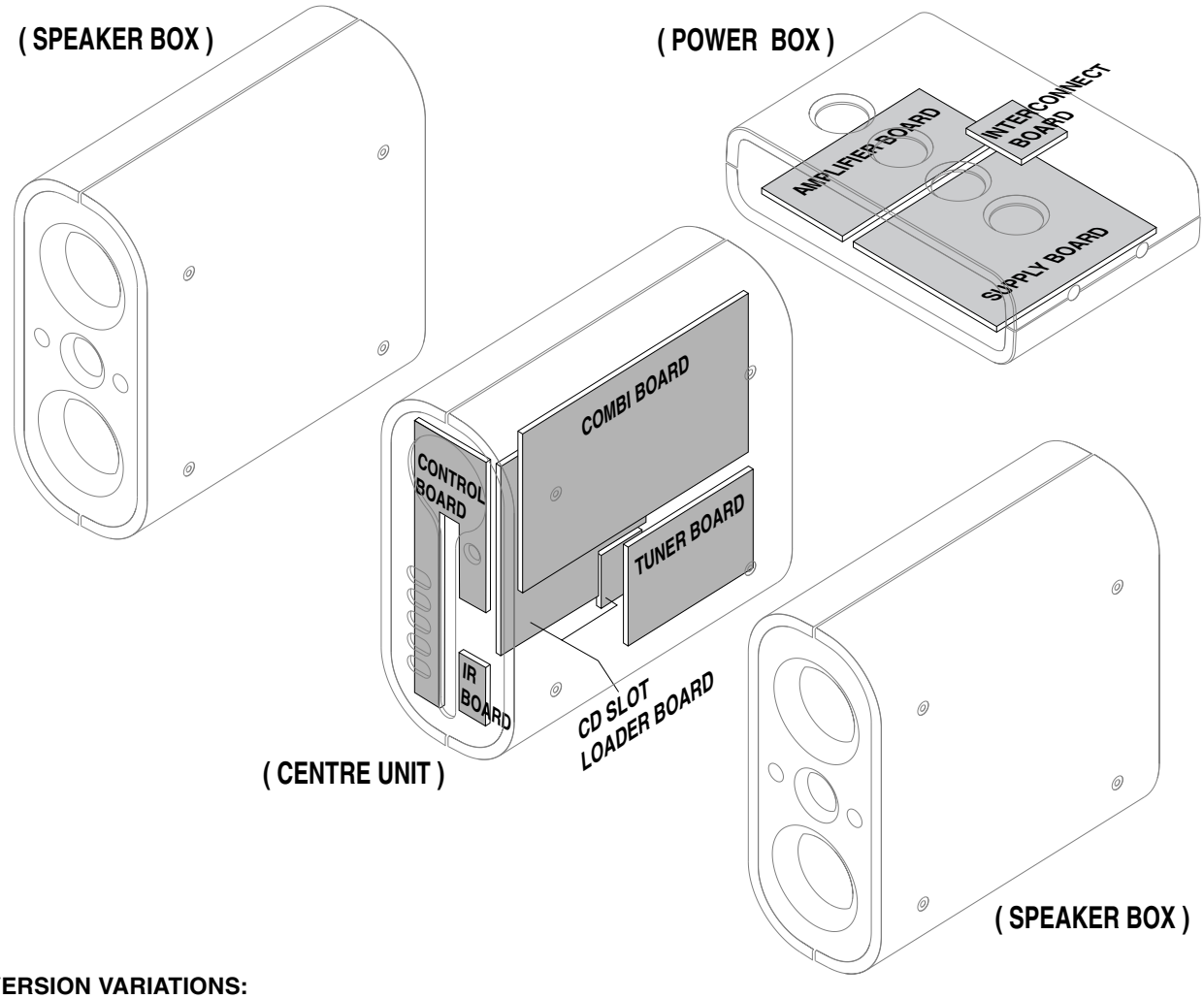
Version 1.0

PHILIPS

LOCATION OF PRINTED CIRCUIT BOARDS



VERSION VARIATIONS:

Type /Versions: / Features & Board in used:	MZ-1000			MZ-1100			MZ-1200			
	/21 /21M	/22	/37	/21 /21M	/22	/37	/21 /21M	/22	/37	
Aux in /CDR in	x	x	x	x	x	x	x	x	x	
Line Out	x	x	x	x	x	x	x	x	x	
Surround Out										
Subwoofer Out										
Digital Out										
Matrix Surround										
CD Text										
Dolby B										
Dolby Pro Logic (DPL)										
Incredible Surround	x	x	x	x	x	x	x	x	x	
Karaoke Features										
ECO Power Standby (Clock Display Off)	x	x	x	x	x	x	x	x	x	
ECO6 Tuner Board - Systems Non-Cenelec	x		x	x		x	x		x	
ECO6 Tuner Board - Systems Cenelec		x			x			x		

SPECIFICATIONS

GENERAL:

Mains voltage : 110-127V/220-240V for /21/21M
120V for /37
220-230V for /22
Mains frequency : 50/60Hz
Power consumption : < 1W at ECO Power Standby
: <10W at Standby (DEMO mode off)
: 33W at Active
Clock accuracy : < 4 seconds per day

TUNER:

FM

Tuning range : 87.5-108MHz
Grid : 50kHz
100kHz for /37
IF frequency : 10.7MHz ± 25kHz
Aerial input : 75Ω coaxial
Sensitivity at 26dB S/N : < 7µV
Selectivity at 600kHz bandwidth : > 25dB
Image rejection : > 25dB
Distortion at RF=1mV, dev. 75kHz : < 3%
-3dB Limiting point : < 8µV
Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 531-1602kHz
530-1700kHz for /21/21M/37
Grid : 9kHz
10kHz for /21/21M/37
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : < 4.0mV/M
Selectivity at 18kHz bandwidth : > 18dB
IF rejection : > 45dB
Image rejection : > 28dB
Distortion at RF=50mV, m=80% : < 5%

AMPLIFIER:

Output power (8Ω, 1kHz, 10% THD)
L & R : 2 x 25W RMS

Frequency response within -3dB : 50Hz-16kHz
Incredible Surround : ON/OFF
Treble : 12.5kHz ± 3 Steps
Bass : 55Hz ± 3 Steps

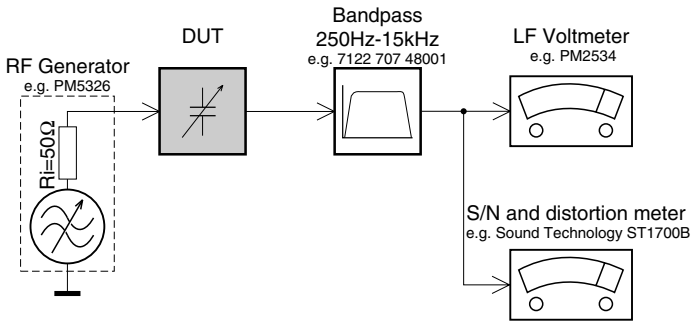
Input sensitivity
Aux in (at 1kHz) : 500mV ± 3dB at 600Ω
CDR in (at 1kHz) : 1V ± 3dB at 600Ω
Output sensitivity
Line out (Left/Right) : 450mV ± 1dB at 22kΩ
Headphone output at 32Ω : 680mV ± 1dB (Vol. Max.)

COMPACT DISC:

Measurement done directly at the connector on the board.
Output resistance : 100Ω
Output voltage (Unloaded, 1kHz) : 550mV
Channel unbalance : ±1dB
Frequency response : 20Hz-20kHz
Signal to Noise Ratio (A-weighted) : > 80dBA
Distortion : < 0.003%
Channel separation (1kHz) : >60dB
MP3-CD bit rate : 32-256 kbps
Sampling frequencies : 32kHz, 44.1kHz, 48kHz

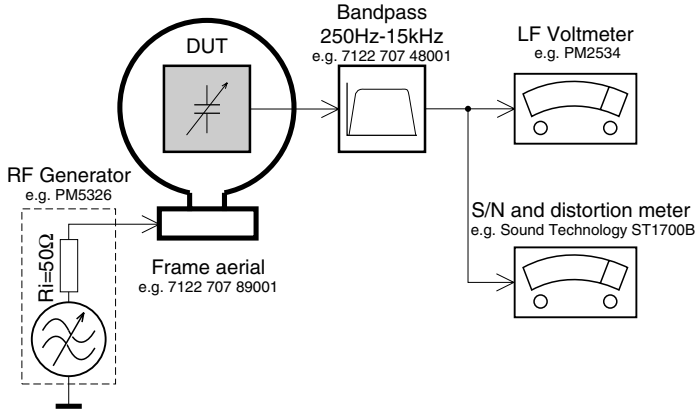
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

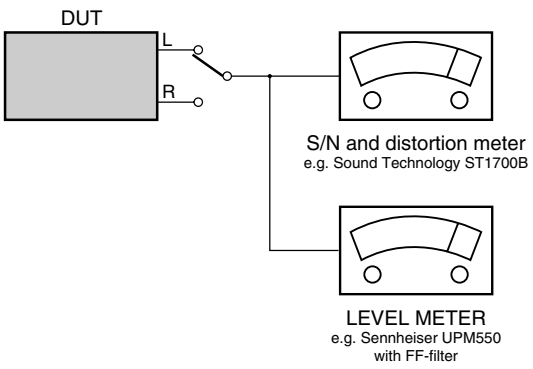
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

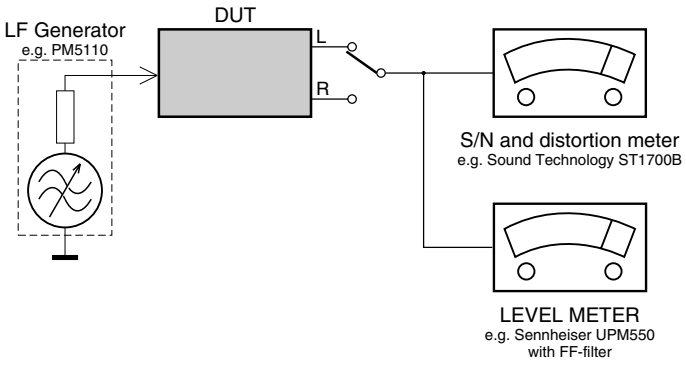
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)



Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



SERVICE AIDS

Service Tools:

Universal Torx driver holder 4822 395 91019
Torx bit T10 150mm 4822 395 50456
Torx driver set T6 - T20 ..... 4822 395 50145
Torx driver T10 extended 4822 395 50423

Cassette:

SBC419 Test cassette CrO2 ..... 4822 397 30069
SBC420 Test cassette Fe 4822 397 30071
MTT150 Dolby level 200nWb/M 4822 397 30271

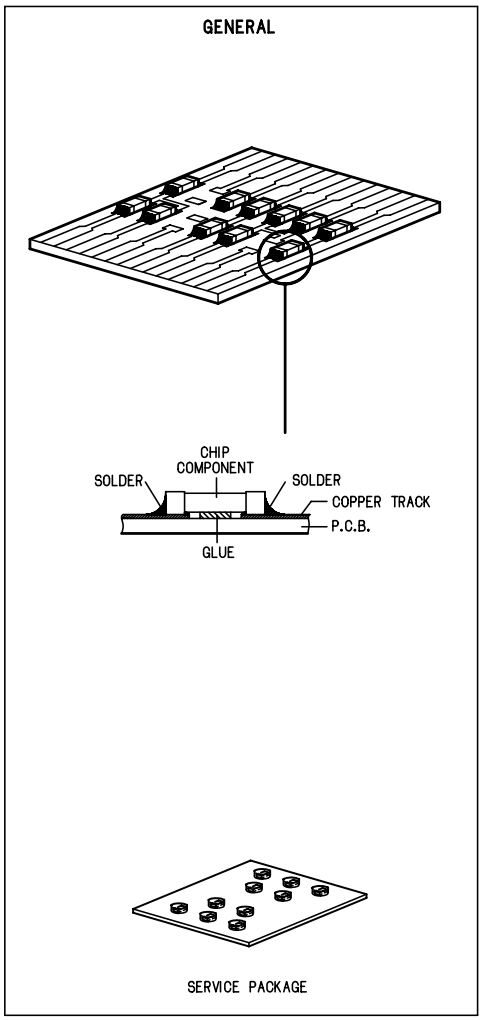
Compact Disc:

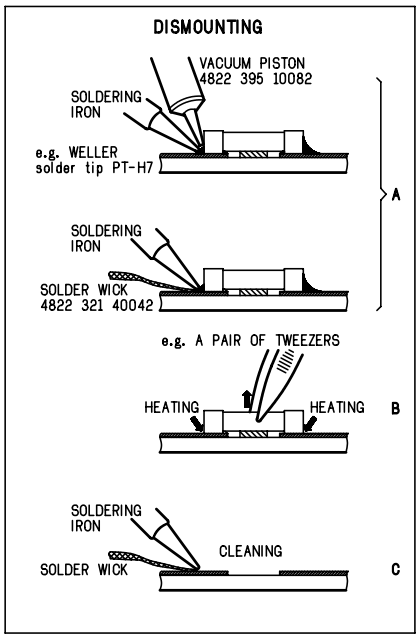
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

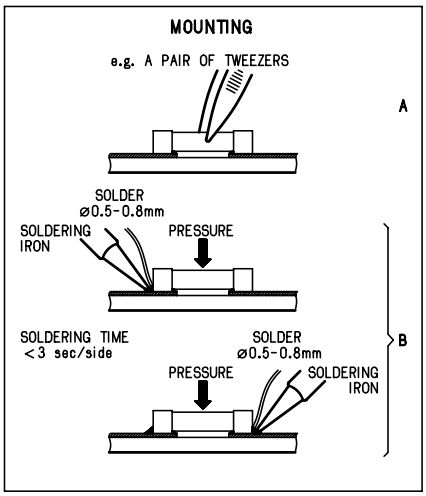
ESD Equipment:

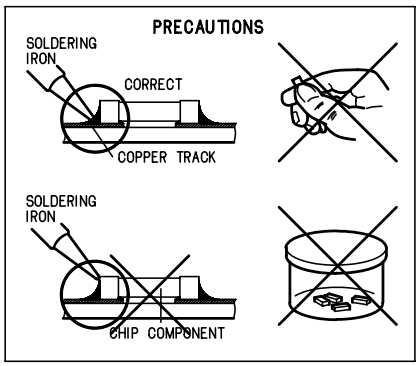
Anti-static table mat - large 1200x650x1.25mm ... 4822 466 10953
Anti-static table mat - small 600x650x1.25mm 4822 466 10958
Anti-static wristband 4822 395 10223
Connector box (1MΩ) 4822 320 11307
Extension cable
(to connect wristband to conn. box) 4822 320 11305
Connecting cable
(to connect table mat to conn. box) 4822 320 11306
Earth cable (to connect product to mat or box) 4822 320 11308
Complete kit ESD3
(combining all above products) 4822 320 10671
Wristband tester 4822 344 13999

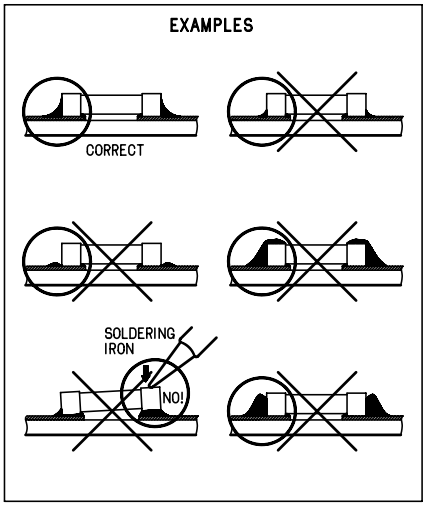
HANDLING CHIP COMPONENTS











ESD

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

GB Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

S Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

SF Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

DISMANTLING INSTRUCTIONS (CENTRE UNIT)

Dismantling of the Cladding

1) Remove 8 Plug Rubbers (pos 123, 124, 125) from both side of the Centre Unit (for MZ-1100 only) with a flat head screw driver (see Figure 1).

Figure 1

2) Remove 8 screws A (see Figure 2) from both side of the Centre Unit to loosen the Cladding (pos 120).

Figure 2

Dismantling of the Front Cover Assembly

1) Remove 2 screws B (see Figure 3 and Figure 6) and uncatch C1 (see Figure 3) with a small size screw driver by givivg a push in the direction as shown in Figure 4 to separate the Front Cover Assembly from the Centre Unit (see Service Position A for Centre Unit).

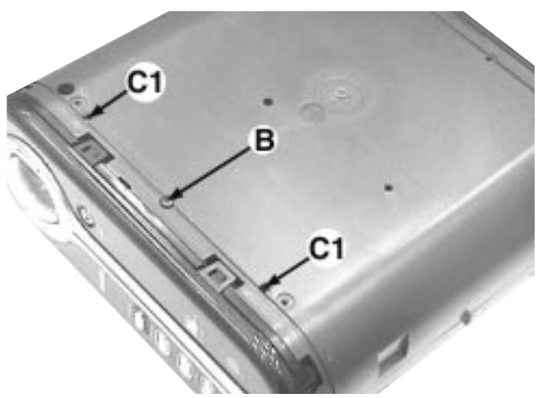


Figure 3

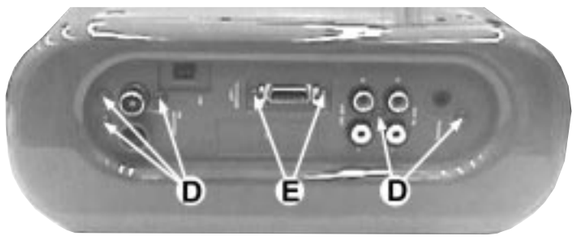
Figure 4

DISMANTLING INSTRUCTIONS (CENTRE UNIT)

Dismantling of the Cover Orn Rear and Cladding Internal

1) Remove 5 screws D and 2 screws E (see Figure 5) to loosen the Cover Orn Rear (pos 119).
2) Remove 4 screws F (see Figure 6) to loosen the Cladding Internal Left (pos 117) and Cladding Internal Right (pos 118).

Figure 5



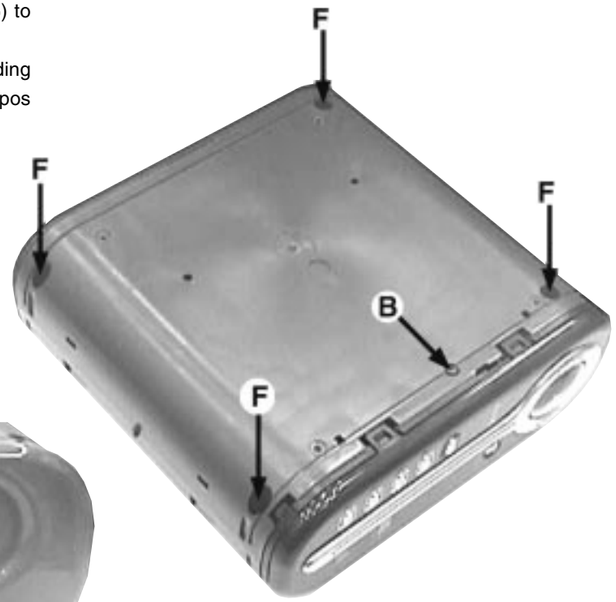
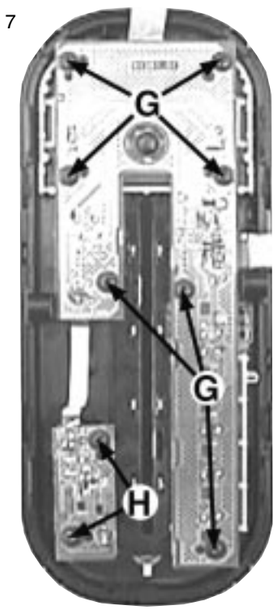


Figure 6

Dismantling of the Control Board

1) Remove 7 screws G (see Figure 7) to loosen the Control Board (pos 1003-A).
2) Remove 2 screws H (see Figure 7) to loosen the IR Eye Board (pos 1003-B).

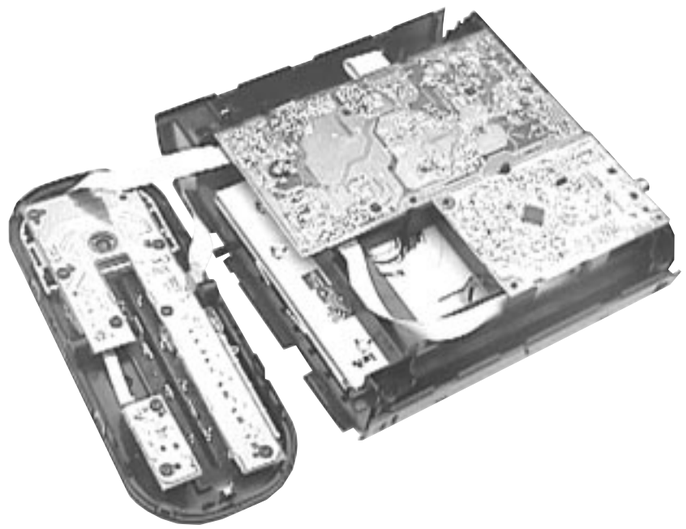
Figure 7



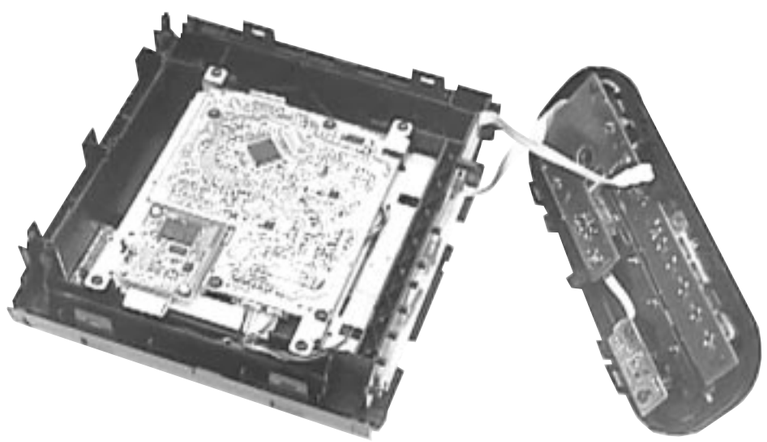
DISMANTLING INSTRUCTIONS (CENTRE UNIT)

Service position A

Service position B



Service position C



DISMANTLING INSTRUCTIONS (POWER BOX)

Dismantling of the Power Box Cabinet

1) Remove 4 screws J (see Figure 8) from both side of the Power Box to loosen the Cabinet Top Power Box (pos 229) and Cabinet Bottom Power Box (pos 230).

Figure 8

2) Uncatch C2 (see Figure 9) to separate the Cabinet Front Power Box (pos 227) and Cabinet Rear Power Box (pos 228) from the chassis.

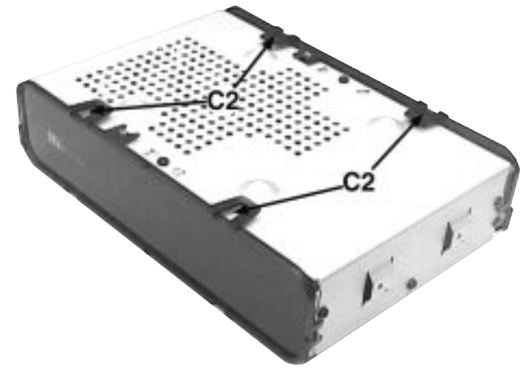


Figure 9

3) Remove 8 screws K (see Figure 10) to loosen the Chassis Top of the Power Box (see Service position A for Power Box).

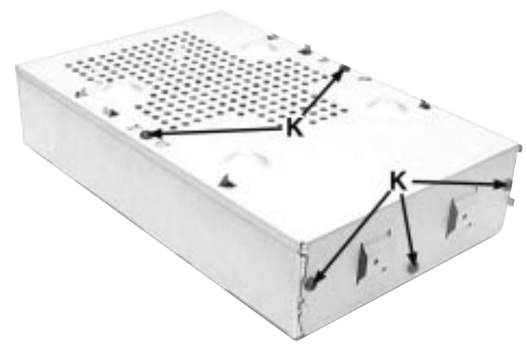


Figure 10

DISMANTLING INSTRUCTIONS (POWER BOX)

Dismantling of the Amplifier Board and Supply Board and Interconnect Board

1) Remove 3 screws L (see Figure 11 and Figure 12) to loosen the Amplifier Board (pos 1102).
2) Remove 2 screws M (see Figure 12) to loosen the Interconnect Board (pos 1103).
3) Remove 3 screws N (see Figure 11 and Figure 12) to loosen the Supply Board (pos 1101).

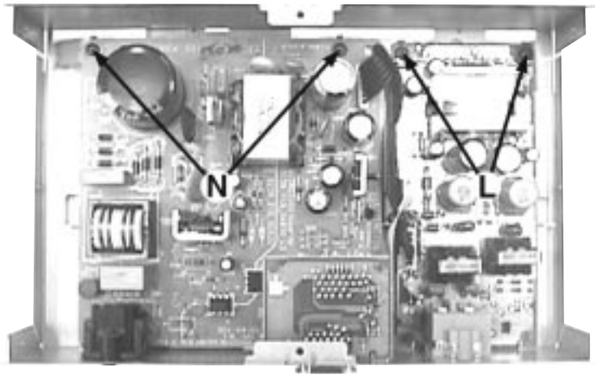


Figure 11

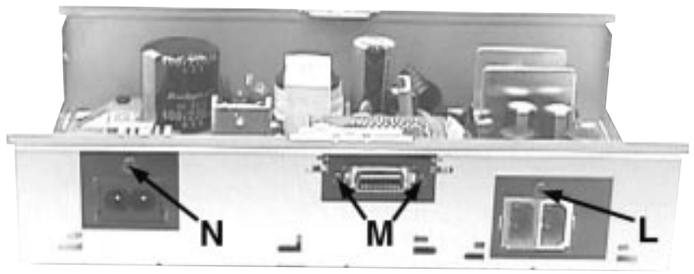


Figure 12

Repair Hints

1) WARNING

Switching Mode Power Supply (SMPS) Board consists of high voltage filter capacitors (2203 or 2210). Safety measures must be taken by the repair technician during servicing:

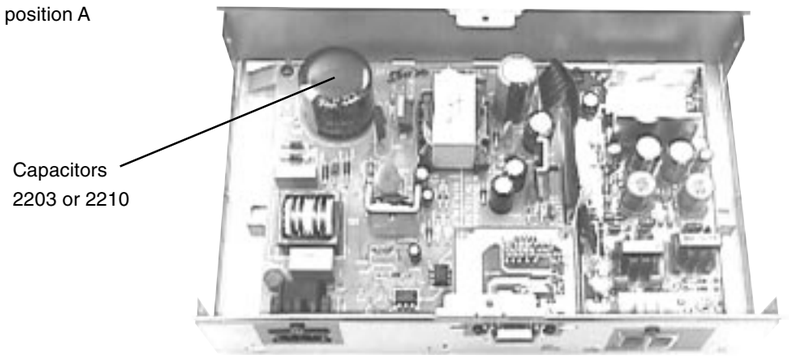
- When the supply is on, avoid touching the SMPS Board and the high voltage filter capacitors (2203 or 2210).
- When the supply is off, make sure to discharge the high voltage filter capacitors (2203 or 2210) with a suitable value resistor before any servicing to prevent electric shock.

2) The flex cables are very fragile, care should be taken not to damage them during repair. After repair, be very sure that the flex cables are inserted properly into the flex sockets before encasing, otherwise faults may occurs.

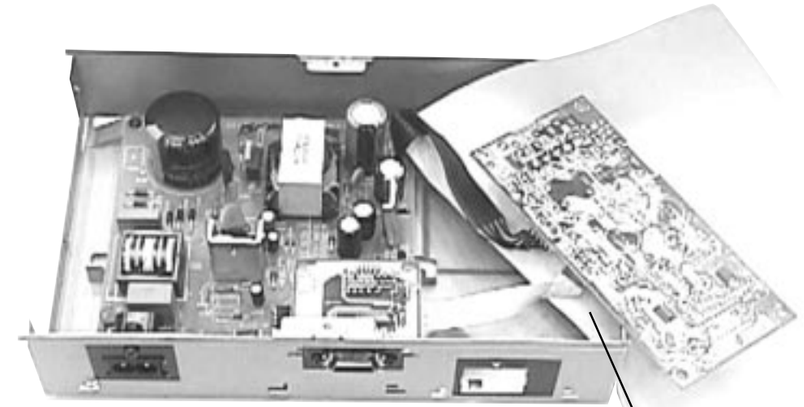
2-3

DISMANTLING INSTRUCTIONS (POWER BOX)

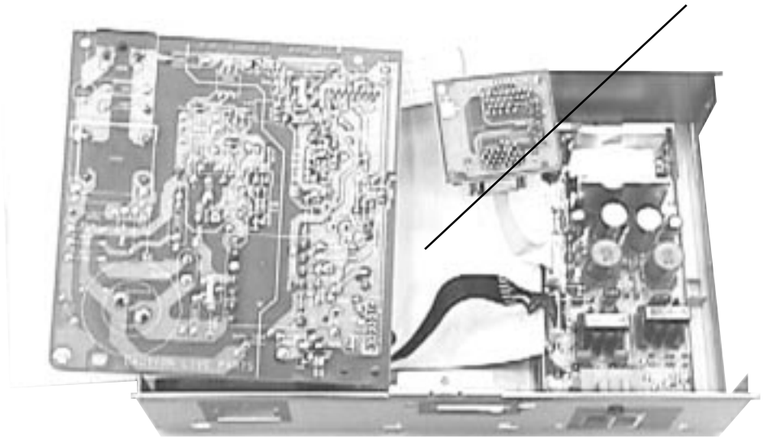
Service position A



Service position B



Service position C



3-1

SERVICE TEST PROGRAM

To start service test program hold ** ►►| & **SOURCE depressed while plugging in the mains cord

The Remote Control must already be set to "AUX" mode before pressing any of the specified Remote Control keys in the Service Test Mode.

All test buttons mentioned in the Service Test Program are activated from the Remote Control unless otherwise specified.

** test buttons are activated from the Set.

Display shows the ROM version "S-Vyy" (Main menu)

S refers to Service Mode

V refers to Version

yy refers to Software version number of the uProcessor (counting up from 01 to 99)

TUNER TEST

TUNER Button pressed? N

Y: Display Tuner Version "ccc"

TUNER Button pressed? N

Y: Service frequencies are copied to the RAM (see Table 1) Tuner works normally except: PROGRAM button

Disconnect Mains cord ? N

Y: Service Mode left

QUARTZ TEST

CLK/TIMER Button pressed? N

Y: Display shows 12M Output on Quartz-Test-Pin pin 19 of uP = 2,929.6875Hz

CLK/TIMER Button pressed? N

Y: Display shows 32K Output on Quartz-Test-Pin pin 19 of uP = 2048Hz

■ Button pressed? N

Y

ADC TEST

AUX Button pressed? N

Y: Display shows "ADC Value" for ADC 1 (Input Line - Option)

AUX Button pressed? N

Y: Display shows "ADC Value" for ADC 2 (Input Line - Key1)

AUX Button pressed? N

Y: Display shows "ADC Value" for ADC 3 (Input Line - Key0)

■ Button pressed? N

Y

ADC Test is used for checking the ADC inputs to the microprocessor.

The display shows an ADC value between 0 and 255 for an input signal between 0 and 5V.

DISPLAY TEST

DIM Button pressed? N

Y: Display shows Figure 1 and switch all LEDs on (see Table 2 - Pattern 1)

DIM Button pressed? N

Y: Display shows Figure 2 and switch alternate LEDs on (see Table 2 - Pattern 2)

DIM Button pressed? N

Y: Display shows Figure 3 and switch all LEDs off (see Table 2 - Pattern 3)

■ Button pressed? N

Y

MP3 MODULE TEST

MP3-CD Button pressed? N

Y

Choose level by pressing |◄◄ ►►|

STEP	DISPLAY	MESSAGE OKAY	MESSAGE ERROR	ACTION
1	MP3CD	-	-	Indicates the module used.
2	TI-Vnn	-	-	Version of the MPEG software (nn = Version Number).
3	TI BUS	BUS OK	BUS ER	Communication test between the Main uP and CD Module
4	SLD I	-	-	CD SLEDGE MOTOR is moved in.
5	SLD O	-	-	CD SLEDGE MOTOR is moved out.
6	TI FOC	FOC OK	FOC ER	FOCUS SERVO Test.
				Press ■ to exit

Note : Disc should be available on the tray before entering the Service Test Mode.

LEDs	Pattern 1	Pattern 2	Pattern 3
SOURCE	ON	ON	OFF
STANDBY / ECO POWER	GREEN & RED	GREEN	OFF
LCD BACKLIGHT	ON	DIM	ON

Table 2

Various other Tests

PRESET	Europe "EUR"	USA "USA"	Oversea "OSE"
1	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz
3	531kHz	530kHz	531/530kHz*
4	1602kHz	1700kHz	1602/1700kHz*
5	558kHz	560kHz	558/560kHz*
6	1494kHz	1500kHz	1494/1500kHz*
7	87.5MHz	98MHz	87.5/98MHz*
8	87.5MHz	87.5MHz	87.5MHz
9	87.5MHz	87.5MHz	87.5MHz
10	87.5MHz	87.5MHz	87.5MHz
11	98MHz	87.5MHz	98/87.5MHz*

Table 1

Note: * Depending on the selected grid frequency (9 or 10kHz). By holding the **SOURCE and **PLAY buttons depressed while switching on the Mains supply, the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.

Figure 1

Figure 2

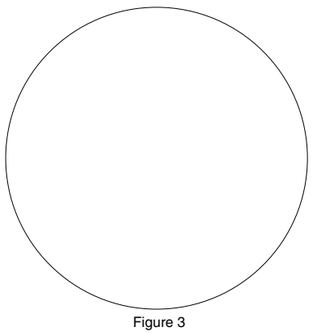
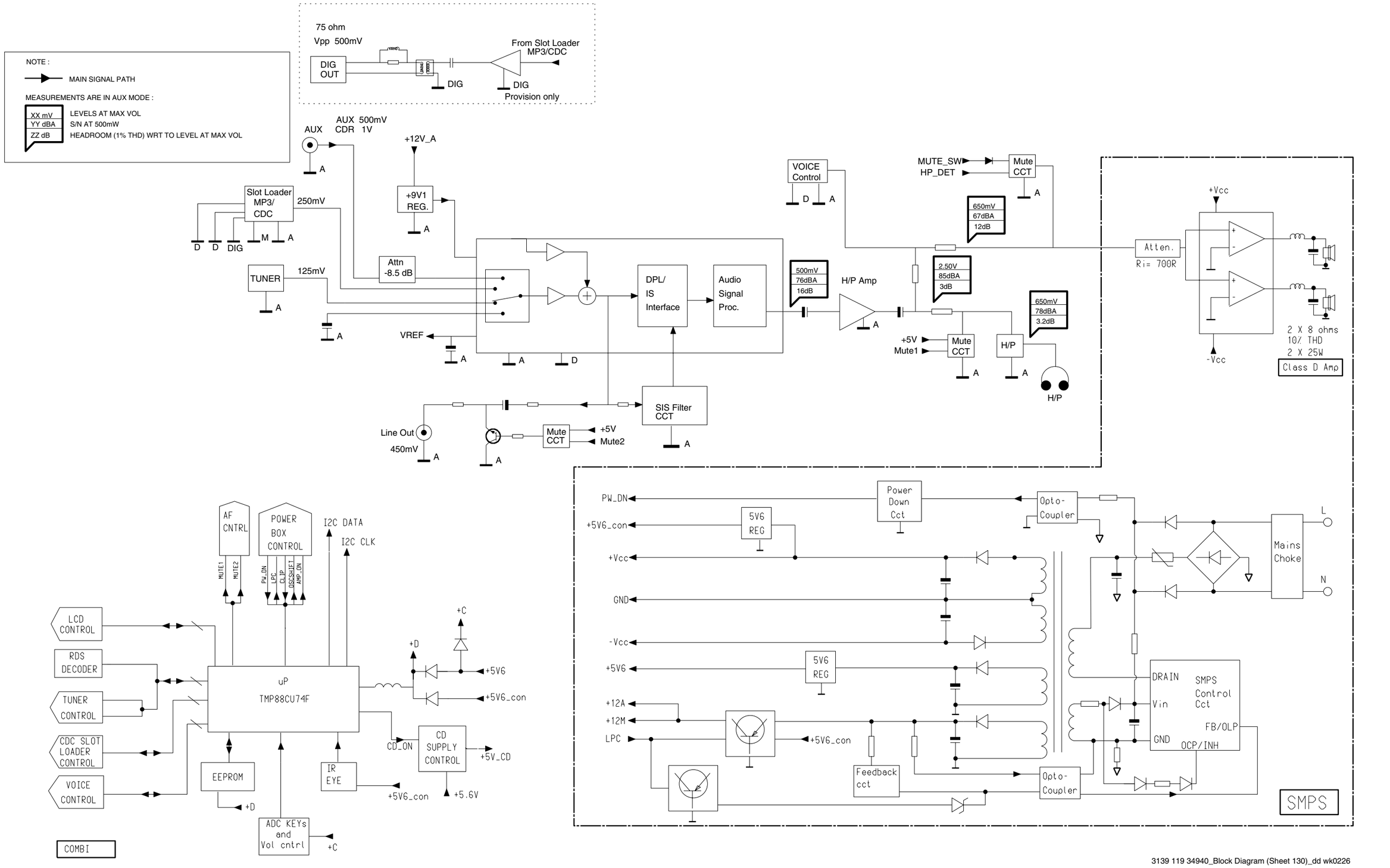


Figure 3

TEST	Activated with	ACTION
EEPROM TEST	►►| ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "FAIL" will be displayed.
EEPROM FORMAT TEST	|◄◄	Load default data. Display shows "NEW" for 1 second. ***Caution!*** ***All presets from the customer will be lost!!***
DEMO TOGGLE	MUTE	Pressing this button will toggle between "DEMO ON" and "DEMO OFF". The DEMO status will scroll once across the Display.
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

4-1

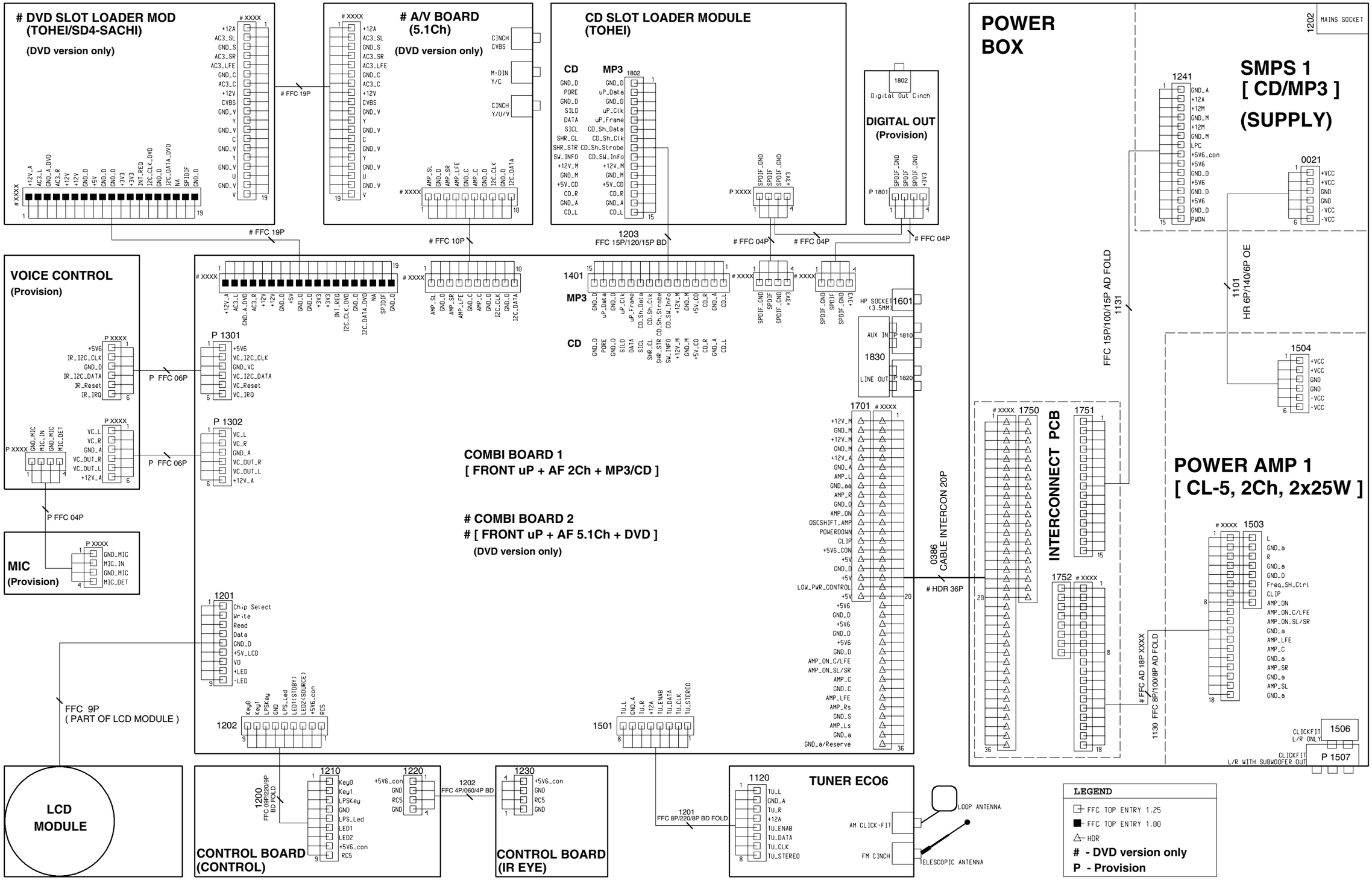
SET BLOCK DIAGRAM



3139 119 34940_Block Diagram (Sheet 130)_dd wk0226

5-1

SET WIRING DIAGRAM



3139 119 34940_Wiring Diagram (Sheet 132)_dd wk0226

CONTROL BOARD

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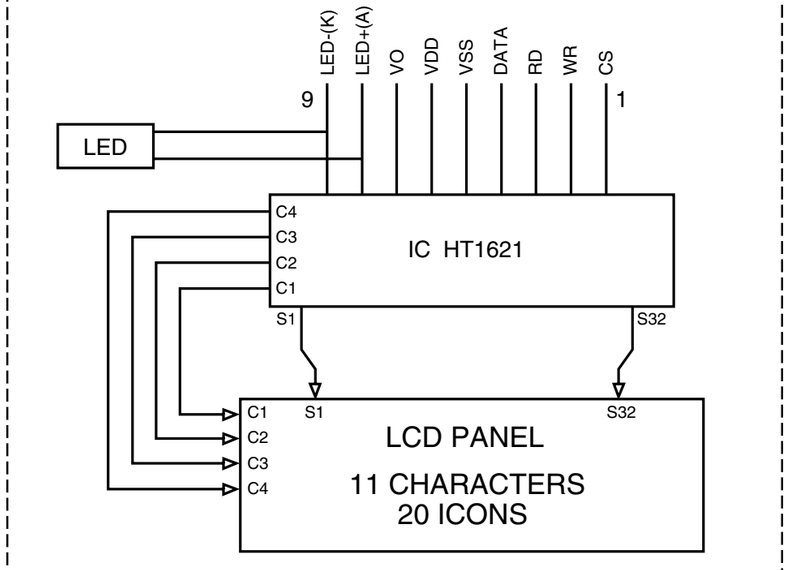
Control Part - Component & Chip layout 6-2
Control Part - Circuit diagram 6-3
IR Eye Part - Component & Chip layout 6-3
IR Eye Part - Circuit diagram 6-3
Electrical parts list 6-4

LCD MODULE

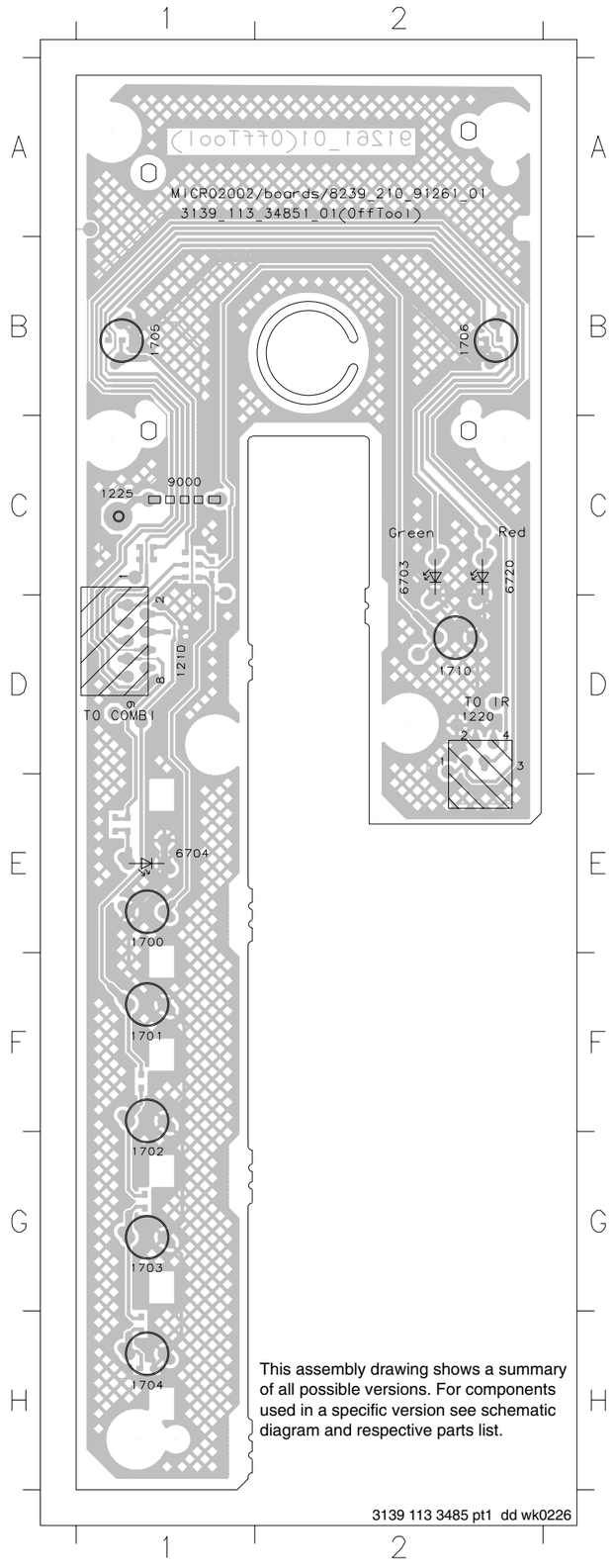
BLOCK DIAGRAM



INTERFACE PIN FUNCTION

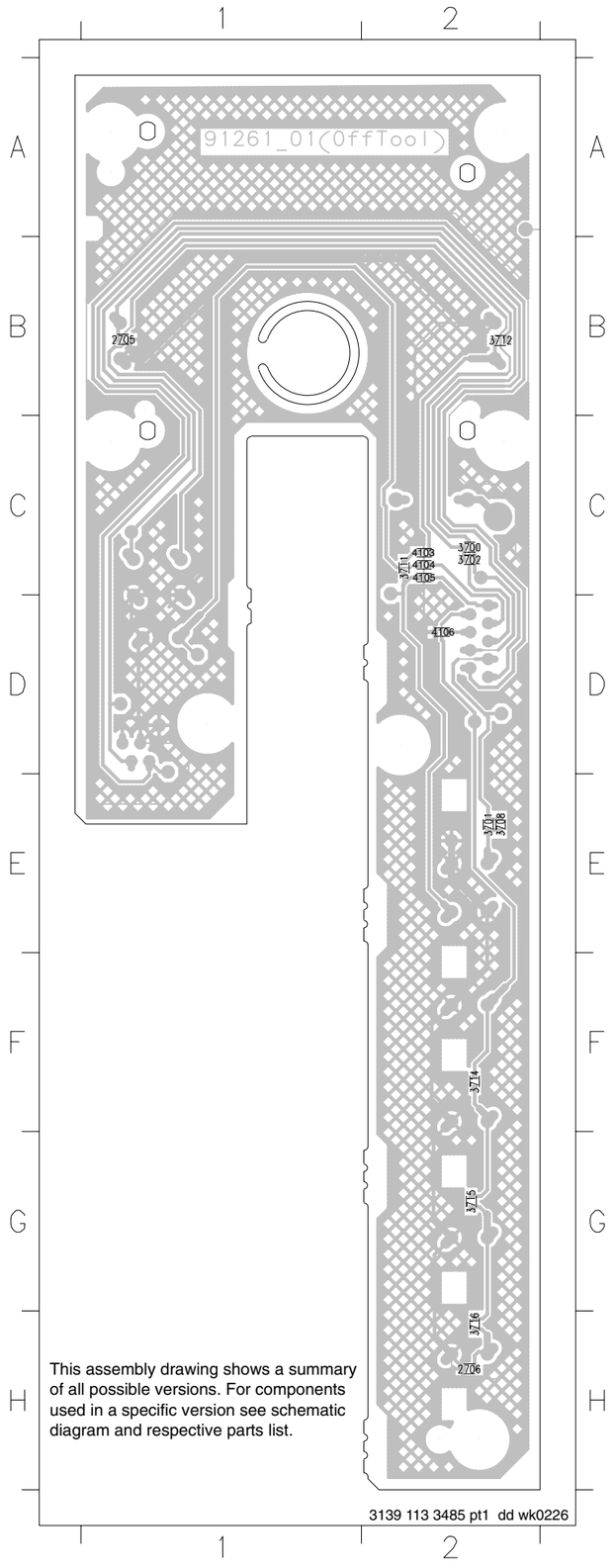
NO	SYMBOL	I/O	FUNCTION
1.	CS	I	Chip Selection
2.	WR	I	Write Clock Input
3.	RD	I	Read Clock Input
4.	DATA	I/O	Serial Data Input/Output
5.	VSS	P	Power Supply
6.	VDD	P	Power Supply
7.	VO	P	LCD Power Input
8.	LED+(A)	P	Power Supply for LED
9.	LED-(K)	P	Power Supply for LED

CONTROL BOARD - COMPONENT LAYOUT



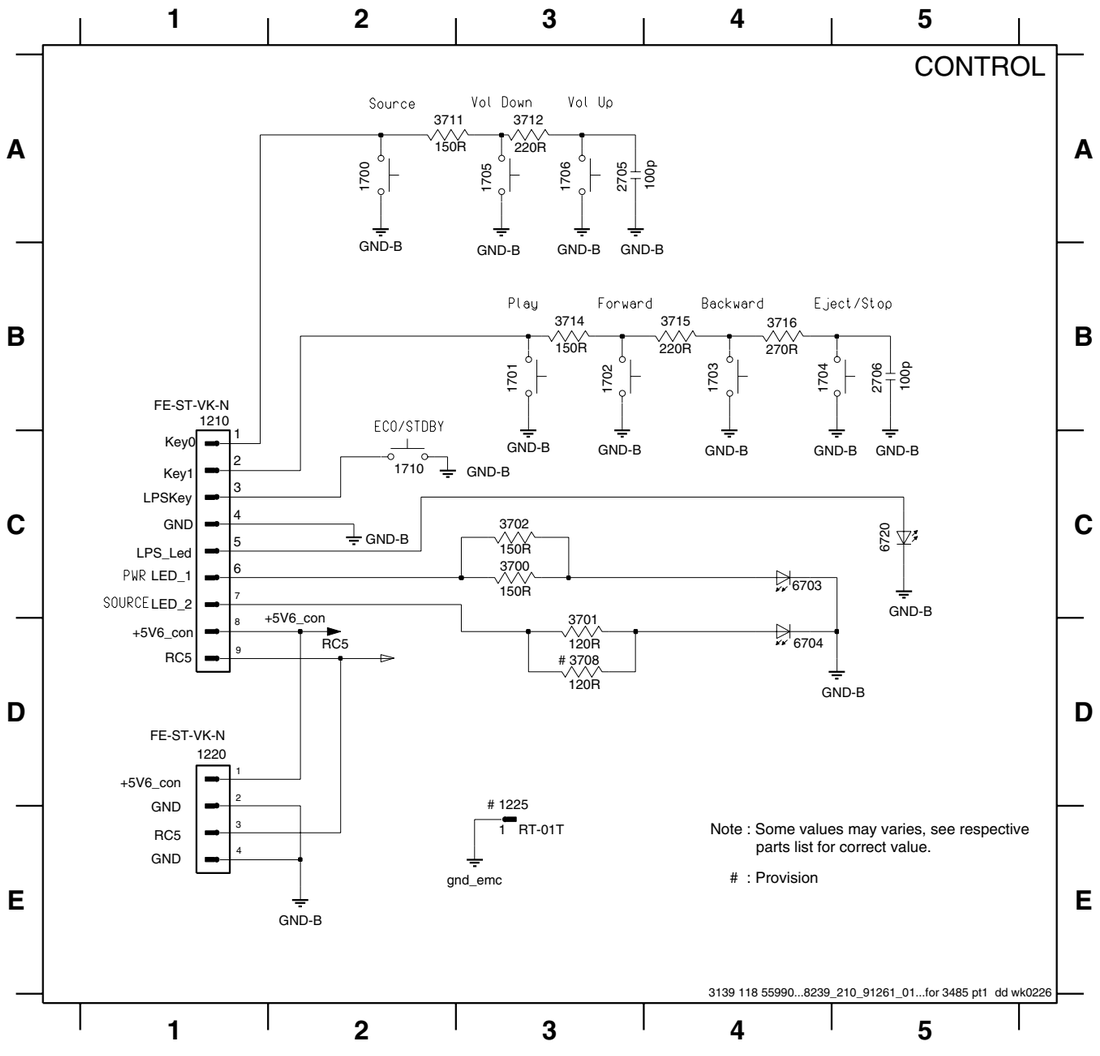
6-2

CONTROL BOARD - CHIP LAYOUT

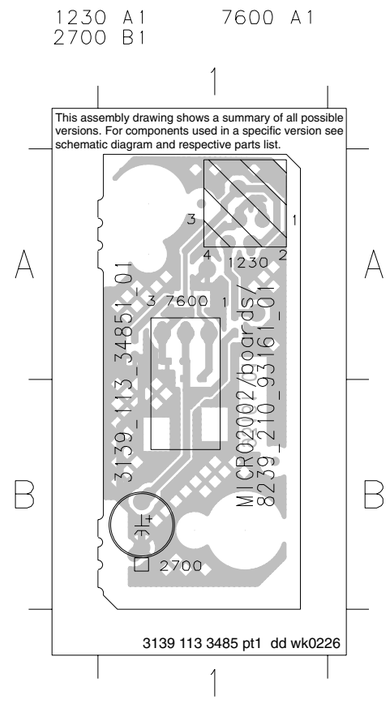


CONTROL BOARD - CIRCUIT DIAGRAM

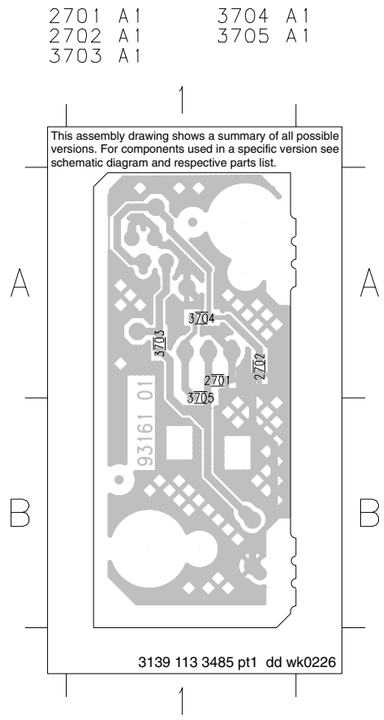
1210 B1 1225 E3 1701 B3 1703 B4 1705 A3 1710 C2 2706 B5 3701 D3 3708 D3 3712 A3 3715 B4 6703 C4 6720 C5
1220 D1 1700 A2 1702 B3 1704 B4 1706 A3 2705 A3 3700 C3 3702 C3 3711 A2 3714 B3 3716 B4 6704 D4



IR EYE BOARD - COMPONENT LAYOUT

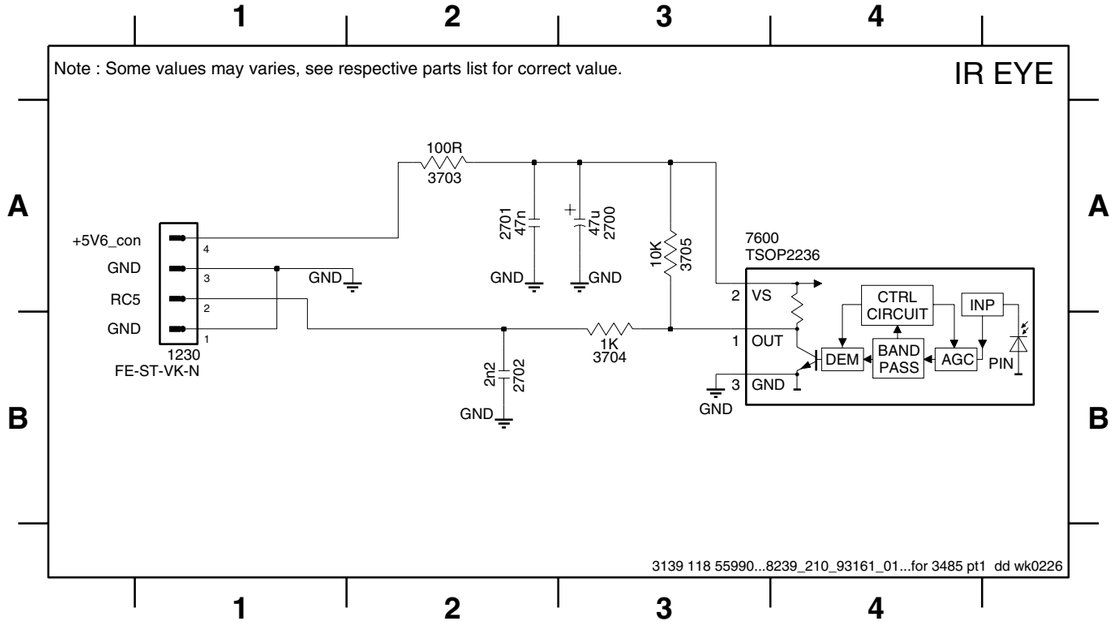

1230 A1
2700 B1
7600 A1
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139_113_34851_01
MICRO2002/boards/8239_210_93161_01
2700
3139 113 3485 pt1 dd wk0226

IR EYE BOARD - CHIP LAYOUT



IR EYE BOARD - CIRCUIT DIAGRAM

1230 B1 2700 A3 2701 A2 2702 B2 3703 A2 3704 B3 3705 A3 7600 A3



6-4

ELECTRICAL PARTS LIST - CONTROL BOARD

MISCELLANEOUS

1210	4822 265 11531	Flex Connector 9P
1220	4822 265 11183	Flex Connector 4P
1230	4822 265 11183	Flex Connector 4P
1700	4822 276 13775	Tact Switch
1701	4822 276 13775	Tact Switch
1702	4822 276 13775	Tact Switch
1703	4822 276 13775	Tact Switch
1704	4822 276 13775	Tact Switch
1705	4822 276 13775	Tact Switch
1706	4822 276 13775	Tact Switch
1710	4822 276 13775	Tact Switch

CAPACITORS

2700	4822 124 81286	47uF 20% 16V
2701	3198 017 34730	47nF 16V
2702	4822 126 14238	2,2nF 50V
2705	2020 552 94427	100pF 5% 50V
2706	2020 552 94427	100pF 5% 50V

RESISTORS

3700	4822 051 30151	150R 5% 0,062W
3701	4822 051 30121	120R 5% 0,062W
3702	4822 051 30151	150R 5% 0,062W
3703	4822 051 30101	100R 5% 0,062W
3704	4822 051 30102	1k 5% 0,062W
3705	4822 051 30103	10k 5% 0,062W
3711	4822 051 30151	150R 5% 0,062W
3712	4822 051 30221	220R 5% 0,062W
3714	4822 051 30151	150R 5% 0,062W
3715	4822 051 30221	220R 5% 0,062W
3716	4822 051 30271	270R 5% 0,062W
4103	4822 051 30008	0R Jumper 0603
4104	4822 051 30008	0R Jumper 0603
4105	4822 051 30008	0R Jumper 0603
4106	4822 051 30008	0R Jumper 0603

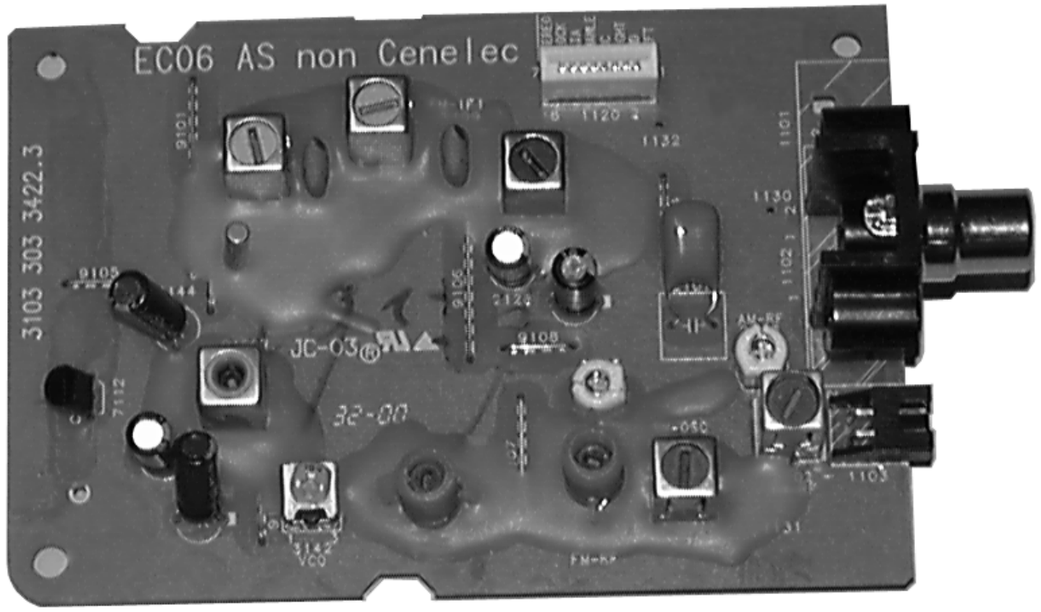
DIODES

6703	9322 183 96676	LED VS LTL-816GE
6704	9322 178 15676	LED VS LTL-8166FTNN
6720	9322 179 76676	LED VS LTL-816EELC

TRANSISTORS & INTEGRATED CIRCUITS

7600	9322 155 82667	IR Receiver TSOP2236ZC1

Note : Only the parts mentioned in this list are normal service spare parts.



ECO6 Tuner Board

version: ***SYSTEMS non-CENELEC***

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Blockdiagram 7A-1
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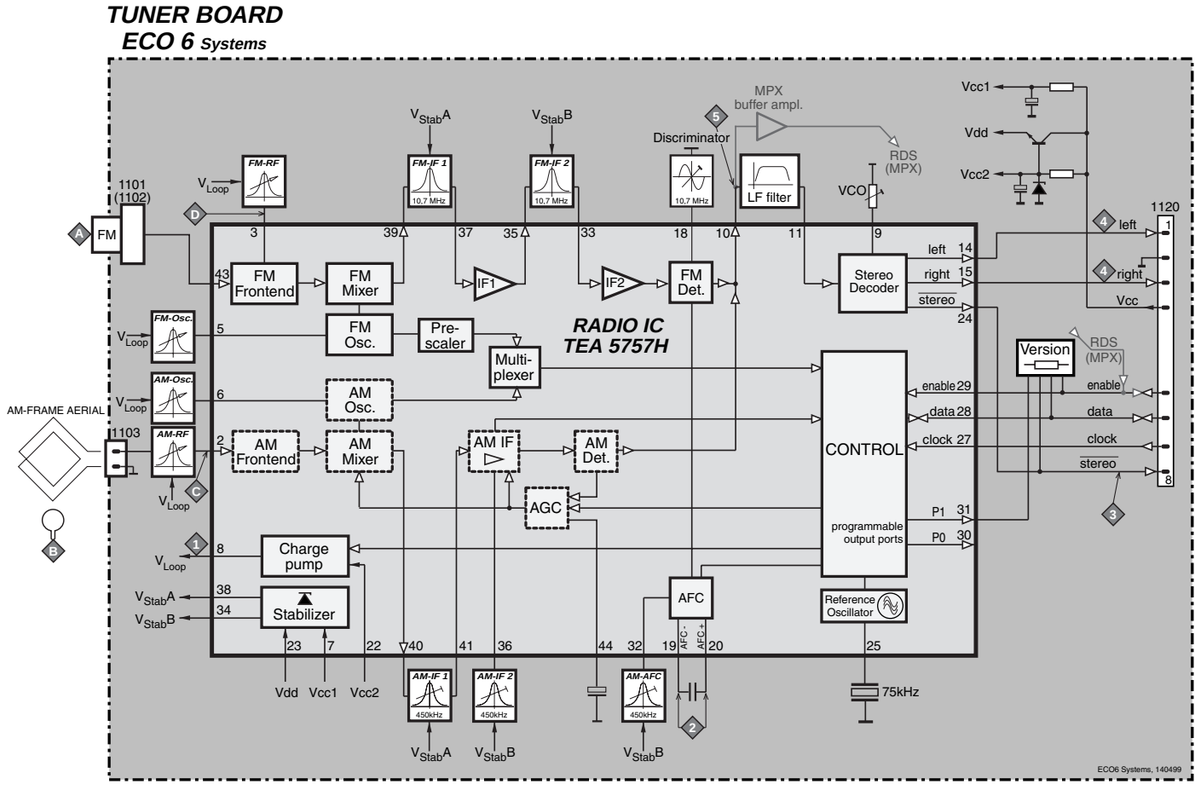
Component Layout.....7A-3
Adjustment table 7A-3
Electrical Partslist.....7A-4

7A-1

BLOCK DIAGRAM



7A-2

TUNER BOARD ECO6 / SYSTEMS NON CENELEC

VERSION PROGRAMMING COMPONENTS

VERSION	6120	3156	3157	3170	7111
/00 /02 FM/MW/LW	X				
/00 /02 FM/MW		X	X		X
/01 FM/MW		X	X		X
/14 FM-OIRT/MW		X	X		X
/17 FM/AM	X				
/06 FM-Japan/AM				X	

X component mounted

VERSION DETECTION

FM-RF

FM-OSCILLATOR

AM-RF

AM-OSCILLATOR

RDS only

MPX BUFFER AMPLIFIER

DISCRIMINATOR

LEGEND

(p)...for provision only
USA ... for USA version only
E-EU ... for East European version only
J ... for Japanese version only

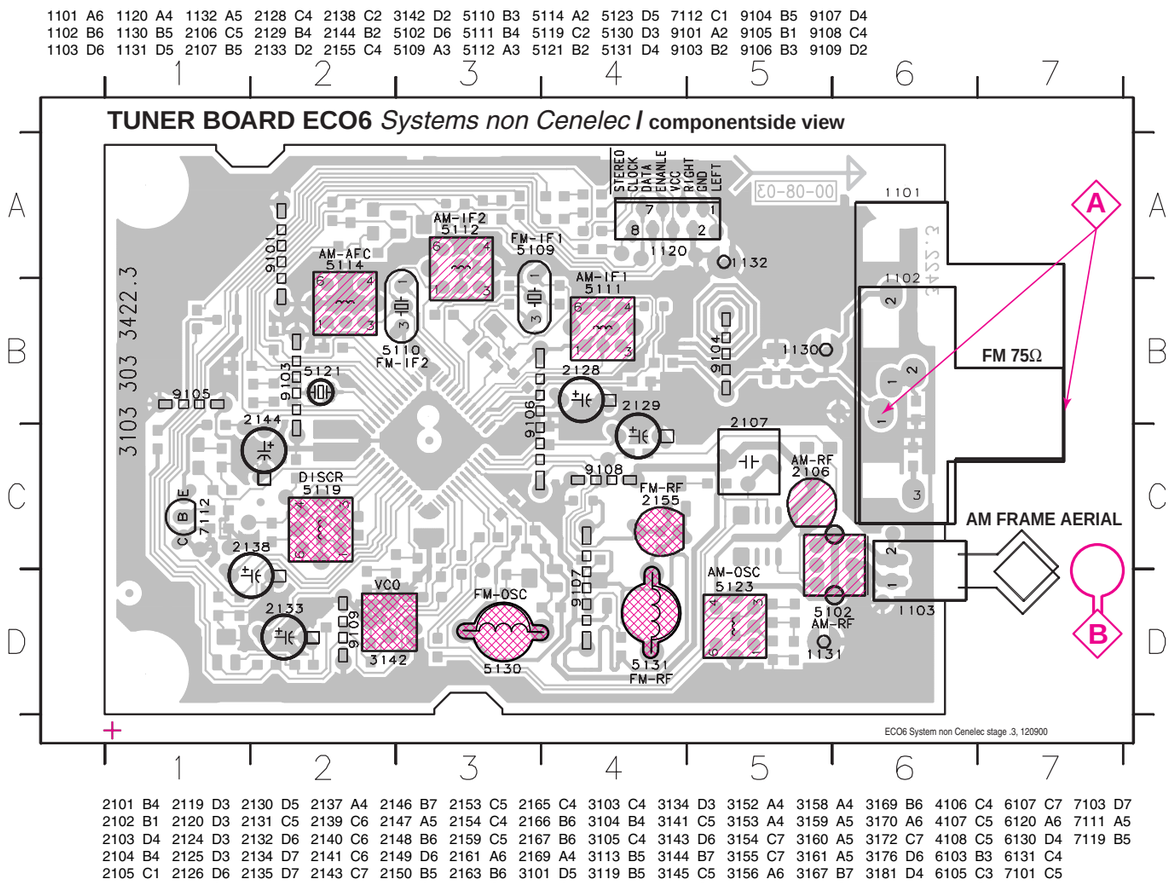
...V FM mode stereo
...V MW mode
...V LW mode
EVM
voltages measured while set is tuned to a strong transmitter

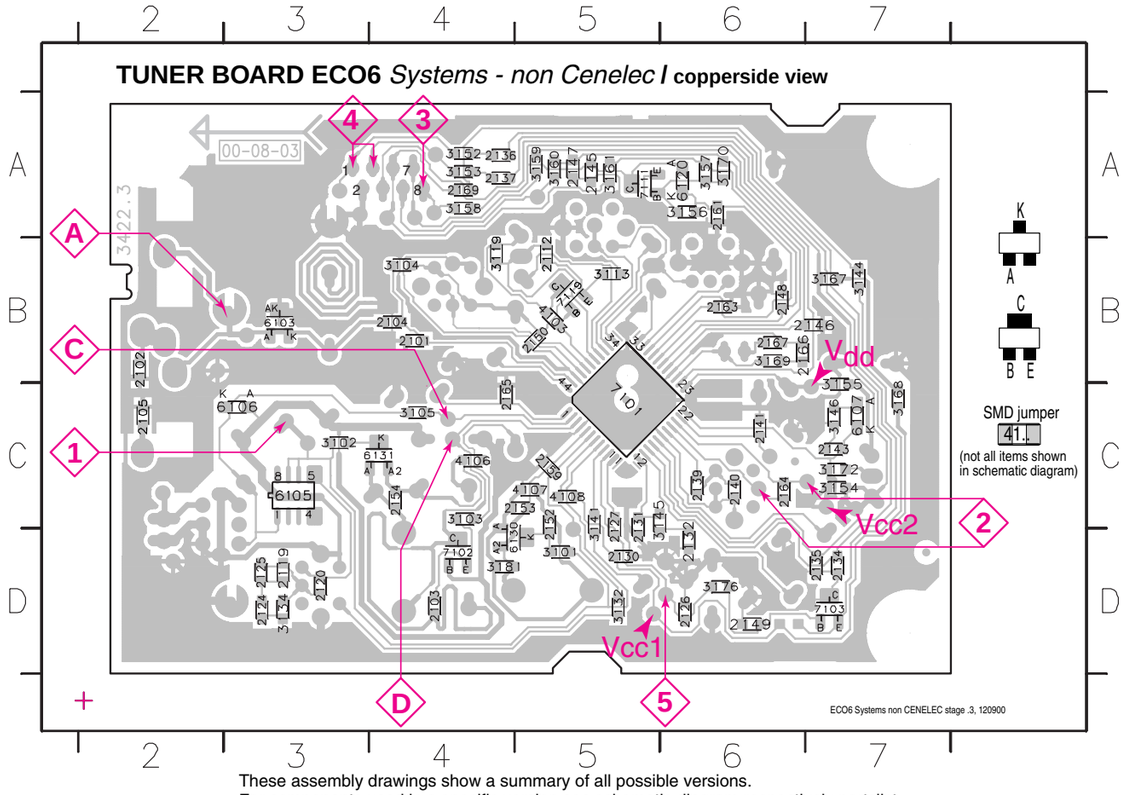
Signal path
FM
AM
MPX (Audio Frequency)
AF - left/right

ECO6 Sys-non Cenelec, 000911

1101 A1
1102 B1
1103 F2
1120 E14
1130 A2
1131 B2
1132 G13
2101 B3
2102 B1
2103 C7
2104 B3
2105 A2
2106 F3
2107 F4
2119 H6
2120 G6
2124 H6
2125 H6
2126 F7
2127 E7
2128 C8
2129 C7
2130 F11
2131 G8
2132 G8
2133 G8
2134 H8
2135 H9
2136 G14
2137 G13
2138 F9
2139 G9
2140 G9
2141 F10
2143 G12
2144 G11
2145 F12
2146 E12
2147 E12
2148 E12
2149 H7
2150 A10
2152 E4
2153 E5
2154 D5
2155 D5
2159 F6
2161 C11
2163 D11
2164 F10
2165 C7
2166 E11
2167 E11
2169 H8
3101 E4
3102 D4
3103 C6
3104 A7
3105 B6
3132 G5
3134 H6
3141 E7
3142 E7
3143 G7
3144 H7
3145 F8
3146 G13
3152 G14
3153 G13
3154 G13
3155 G11
3156 C12
3157 C12
3158 E13
3159 D13
3160 D12
3161 D13
3167 F12
3168 F11
3169 E11
3170 C12
3172 G12
3176 G7
3181 E6
5102 F2
5109 B9
5110 B10
5111 A8
5112 A11
5114 B11
5119 G9
5121 E11
5123 G5
5130 E5
5131 C6
6103 B2
6105-1 F3
6105-2 G5
6106 C3
6107 G13
6120 C13
6130 E5
6131 D5
7101 C8
7102 C6
7103 H7
7111 C13
7112 G12
T102 B2
T103 B2
T105 F2
T106 F2
T109 B6
T110 F5
T111 F4
T112 F7
T113 A8
T114 B10
T115 A8
T116 F10
T117 G13
T118 G11
T120 F13
T121 F13
T122 F13
T123 E13
T124 G14
T125 F14
T126 F13
T127 F13
T128 D7
T140 F11
T141 F10
T142 F10

7A-3





These assembly drawings show a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

TUNER ADJUSTMENT TABLE (ECO6 FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	◇1	8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	◇D	IC 7101 21 shortcircuit to block AFC 2141	5119	◇2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	◇A	108MHz	2155	◇4	MAX
	87.5MHz (65.81MHz)	mod=1kHz Δf=±22.5kHz	87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	◇A	98MHz	3142	◇3	152kHz ±1kHz 1)
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	◇C Δf=±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 100nF 220R	5111	◇5	max. f_o symmetric
			IC 7101 40 100nF 220R see remark 2)	5112		
AM AFC **MW**		◇C continuous wave V_{RF} = 2mV		5114	◇2	0 ± 2 mV DC
AM RF 3)						
MW 4) FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	◇B	1494kHz	2106	◇5	max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	Δf = ±30kHz V_{RF} as low as possible	1500kHz	2106		
	560kHz		560kHz	5102		

ECO6, Sys + PA with frame aerial, 070799

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

3) For AM RF adjustments the original frame antenna has to be used !

4) MW has to be aligned before LW.

↕ Repeat

Electrical Partslist *ECO6* SYSTEMS NON-CENELEC

7A-4

MISCELLANEOUS

1101	2422 015 19376	SOCKET 2P CLICKFIT	USA only
1102	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
1103	4822 265 31184	JST CONNECTOR 2 POLE	
1120	4822 265 11515	FFC SOCKET, 8P	

CAPACITORS

2101 ©	4822 126 13692	47pF	1%	63V	
2102 ©	4822 126 13838	100nF	10%	50V	not USA
2103 ©	5322 122 31647	1nF	10%	63V	
2104 ©	5322 122 32531	100pF	5%	50V	
2105 ©	4822 126 13838	100nF	10%	50V	USA only
2106	2020 800 00191	3-11pF TRIMCAP.,N450			
2107	4822 121 51319	1µF	20%	50V	
2120 ©	4822 126 13689	18pF	1%	63V	
2124 ©	5322 122 32654	22nF	10%	63V	
2125 ©	2020 552 96199	560pF	1%	50V	
2126 ©	5322 122 31863	330pF	5%	50V	
2127 ©	4822 126 14076	220nF	20%	25V	
2128	4822 124 40248	10µF	20%	63V	
2129	4822 124 41584	100µF	20%	10V	
2130 ©	5322 122 32654	22nF	10%	63V	
2131 ©	4822 126 13482	470nF	20%	16V	
2132 ©	4822 126 13482	470nF	20%	16V	
2133	4822 124 21913	1µF	20%	63V	
2134 ©	4822 126 13188	15nF	5%	63V	not USA
2134 ©	5322 122 32654	22nF	10%	63V	USA only
2135 ©	4822 126 13188	15nF	5%	63V	not USA
2135 ©	5322 122 32654	22nF	10%	63V	USA only
2136 ©	4822 126 14076	220nF	20%	25V	
2137 ©	4822 126 14076	220nF	20%	25V	
2138	4822 124 22652	2,2µF	20%	50V	
2139 ©	4822 126 14236	15pF	5%	50V	
2140 ©	4822 126 13695	82pF	1%	63V	
2141 ©	4822 126 13838	100nF	10%	50V	
2143 ©	4822 126 14076	220nF	20%	25V	
2144	4822 124 21913	1µF	20%	63V	
2145 ©	4822 122 33575	220pF	5%	50V	
2146 ©	4822 122 33575	220pF	5%	50V	
2147 ©	4822 122 33575	220pF	5%	50V	
2148 ©	4822 122 33127	2,2nF	10%	63V	
2149 ©	5322 122 32659	33pF	5%	50V	RDS only
2150 ©	4822 126 13838	100nF	10%	50V	
2152 ©	4822 126 12105	33nF	5%	63V	not for East Europe
2152 ©	5322 116 80853	560pF	5%	63V	for East Europe only
2153 ©	4822 126 13486	15pF	2%	63V	not for East Europe
2153 ©	4822 122 33926	12pF	2%	50V	for East Europe only
2155	2020 800 00191	3-11pF TRIMCAP.,N450			
2159 ©	5322 122 32659	33pF	5%	50V	
2164 ©	4822 126 13482	470nF	20%	16V	
2165 ©	4822 126 13838	100nF	10%	50V	
2166 ©	5322 122 31647	1nF	10%	63V	
2167 ©	4822 122 33926	12pF	5%	50V	
2169 ©	4822 122 33127	2,2nF	10%	63V	RDS only

RESISTORS

3101 ©	4822 051 20333	33kΩ	5%	0,1W	
3102 ©	4822 117 10837	100kΩ	1%	0,1W	
3103 ©	4822 051 20822	8,2kΩ	5%	0,1W	
3104 ©	4822 117 13577	330Ω	1%	0,1W	
3105 ©	4822 117 11503	220Ω	5%	0,1W	
3132 ©	4822 051 20479	47Ω	5%	0,1W	
3134 ©	4822 051 20223	22kΩ	5%	0,1W	
3141 ©	4822 117 11148	56kΩ	1%	0,1W	
3142	4822 100 12159	TRIMPOT. 100kΩ			

RESISTORS

3143 ©	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144 ©	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145©	4822 117 11449	2,2kΩ	1%	0,1W	
3146 ©	4822 051 20229	22Ω	5%	0,1W	
3152 ©	4822 051 20471	470Ω	5%	0,1W	
3153 ©	4822 051 20471	470Ω	5%	0,1W	
3154 ©	4822 117 13577	330Ω	1%	0,1W	
3155 ©	4822 117 11503	220Ω	5%	0,1W	
3156 ©	4822 117 10837	100kΩ	1%	0,1W	
3157 ©	4822 117 10837	100kΩ	1%	0,1W	
3158 ©	4822 051 20471	470Ω	5%	0,1W	
3159 ©	4822 051 20471	470Ω	5%	0,1W	
3160 ©	4822 051 20471	470Ω	5%	0,1W	
3161 ©	4822 051 20223	22kΩ	5%	0,1W	
3167 ©	4822 051 20121	120Ω	5%	0,1W	
3168 ©	4822 051 20121	120Ω	5%	0,1W	
3169 ©	4822 051 20154	150kΩ	5%	0,1W	
3170 ©	4822 117 10837	100kΩ	1%	0,1W	
3172 ©	4822 051 20562	5,6kΩ	5%	0,1W	
3176 ©	4822 051 20333	33kΩ	5%	0,1W	RDS only
3181 ©	4822 051 10102	1kΩ	2%	0,25W	
4103 ©	4822 051 20008	CHIP JUMPER 0805			
4106 ©	4822 051 20008	CHIP JUMPER 0805			
4107 ©	4822 051 20008	CHIP JUMPER 0805			
4108 ©	4822 051 20008	CHIP JUMPER 0805			

COILS

5102	4822 157 71634	RF-COIL MW
5109	4822 242 70665	FM-IF FILTER 10,7MHz
5110	4822 242 70665	FM-IF FILTER 10,7MHz
5111	2422 549 44023	AM-IF FILTER 450kHz
5112	4822 157 70302	AM-IF FILTER 450kHz
5114	4822 157 70302	AM-IF FILTER 450kHz
5119	4822 157 11443	DISCRIMINATOR COIL
5121	4822 242 10261	QUARTZ 75kHz
5123	2422 549 44108	RF-COIL, AM-OSCILLATOR
5130	4822 157 11843	RF COIL 1,5 TURNS
5131	4822 157 11843	RF COIL 1,5 TURNS

DIODES

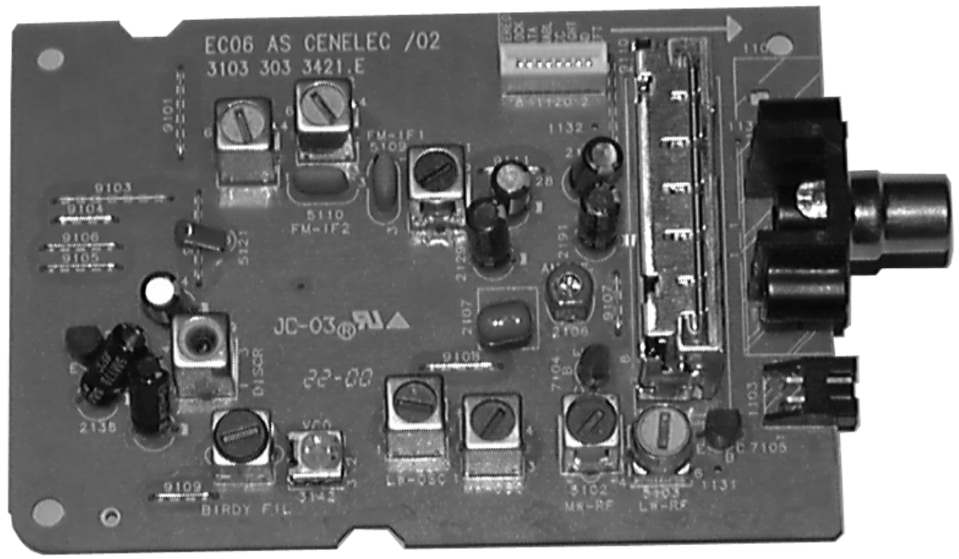
6103 ©	5322 130 34337	BAV99
6105 ©	4822 130 83075	HN1V02H
6106 ©	4822 130 83757	BAS216
6107 ©	9340 386 90115	BZX284-C11
6120 ©	4822 130 83757	BAS216
6130 ©	4822 130 82833	1SV228
6131 ©	4822 130 82833	1SV228

TRANSISTORS

7102	4822 130 42131	BF550	
7103 ©	5322 130 42756	BC857C	RDS only
7111 ©	5322 130 42755	BC847C	
7112	4822 130 44503	BC547C	

INTEGRATED CIRCUITS

7101 ©	9351 740 80557	TEA5757H/V1, RADIO IC



ECO6 Tuner Board

version: ***SYSTEMS CENELEC***

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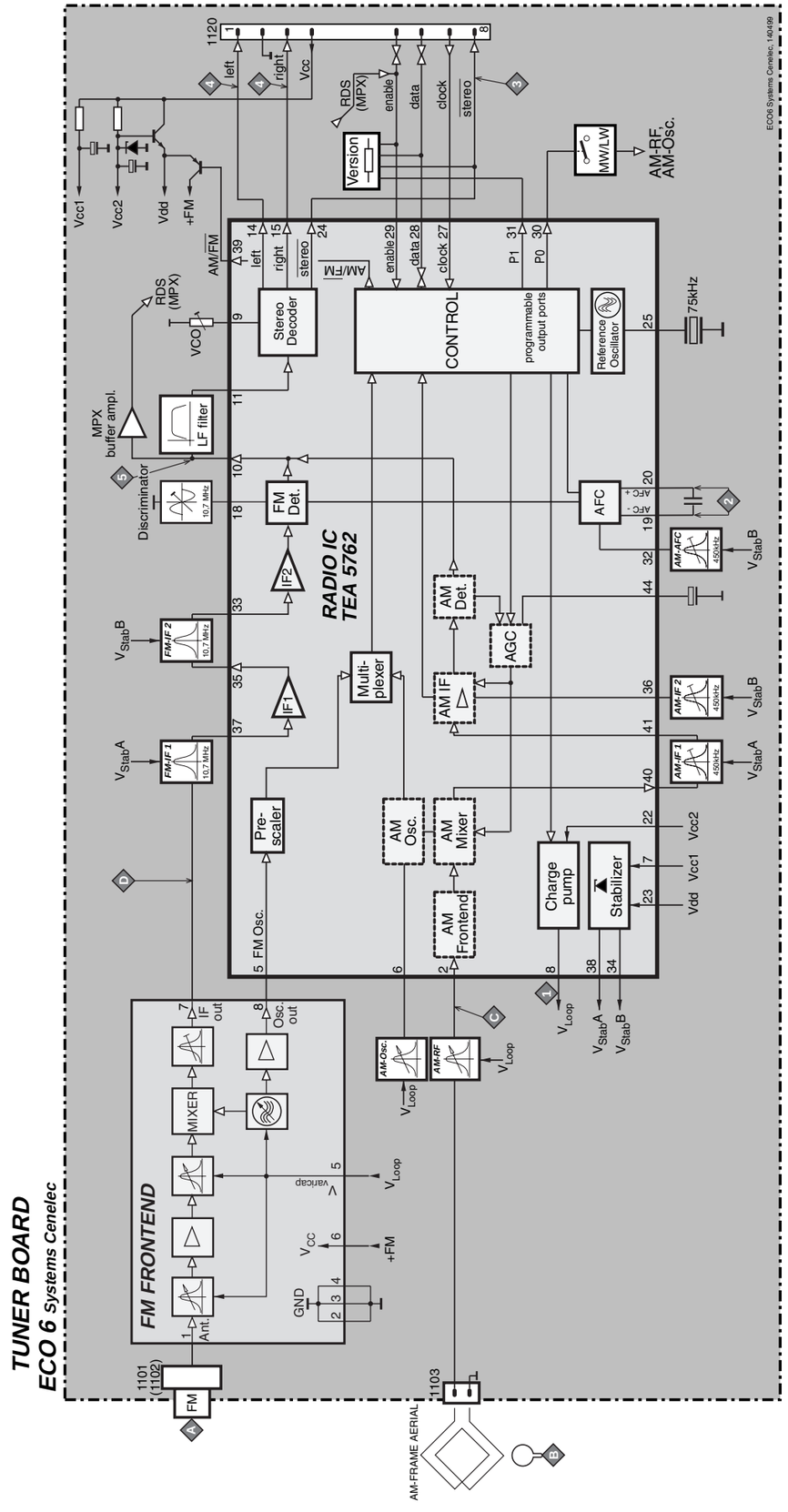
BLOCK DIAGRAM



7B-2

TUNER BOARD ECO6 / SYSTEMS-CENELEC

VERSION PROGRAMMING COMPONENTS

VERSION	6120	3156	3157	3170	7111
/00 /02 FM/MW/LW	☒				
/00 /02 FM/MW		☒	☒	☒	☒
/01 FM/MW		☒	☒	☒	☒
/14 FM-OIRT/MW		☒	☒	☒	☒
/17 FM/AM	☒				

☒ component mounted

1101 A2 5121 E11
1102 B1 5122 E5
1103 E2 5123 G5
1110 B2 6105-1 E4
1120 E14 6105-2 G6
1130 A2 6106 D4
1131 C2 6107 G13
1132 F13 6120 C13
2102 B1 7101 C8
2105 A2 7103 H8
2106 E3 7104 D2
2107 E4 7105 F4
2108 G3 7109 H3
2109 G3 7110 H12
2118 H6 7111 C13
2119 H6 7112 G12
2120 H6 7122 H4
2122 I6 7124 H7
2123 H6 T102 B2
2124 H6 T103 B2
2125 H6 T104 B6
2127 E7 T105 E2
2128 B8 T106 E2
2129 C7 T107 C3
2130 F11 T109 D5
2131 F8 T110 D5
2132 F8 T111 E5
2133 F8 T112 F7
2134 I8 T113 A9
2135 I9 T114 B11
2136 H14 T116 F10
2137 H13 T117 F13
2138 F9 T118 G11
2139 G9 T120 F13
2140 G9 T121 F13
2141 F10 T122 E13
2143 G12 T123 E13
2144 G11 T124 G14
2145 E11 T125 F14
2146 E12 T126 F13
2147 E12 T127 F13
2148 E12 T140 F11
2149 H7 T141 F10
2150 A10 T142 F10
2159 D5
2161 C11
2162 H12
2163 D11
2164 G10
2165 C7
2166 E11
2167 E11
2169 G8
2180 C4
2190 C3
2191 C3
3105 D5
3108 D2
3109 G4
3123 H3
3125 H2
3128 H3
3130 I9
3131 I9
3132 G4
3134 H6
3135 E7
3137 H7
3141 E7
3142 E6
3143 G7
3144 G8
3145 F8
3146 G13
3150 H12
3151 H12
3152 G14
3153 G13
3154 F13
3155 G12
3156 C12
3157 D12
3158 E13
3159 D13
3160 D13
3161 D13
3167 F12
3168 F11
3169 E11
3170 D12
3171 G12
3172 G12
3176 H7
3180 I3
3190 B6
3191 B7
3192 B6
3193 B4
3194 C4
3195 C3
4101 E2
4102 F3
4104 H5
5102 E3
5103 F2
5109 B9
5110 B10
5111 A9
5112 A11
5114 B11
5115 E7
5118 G9
5119 G9

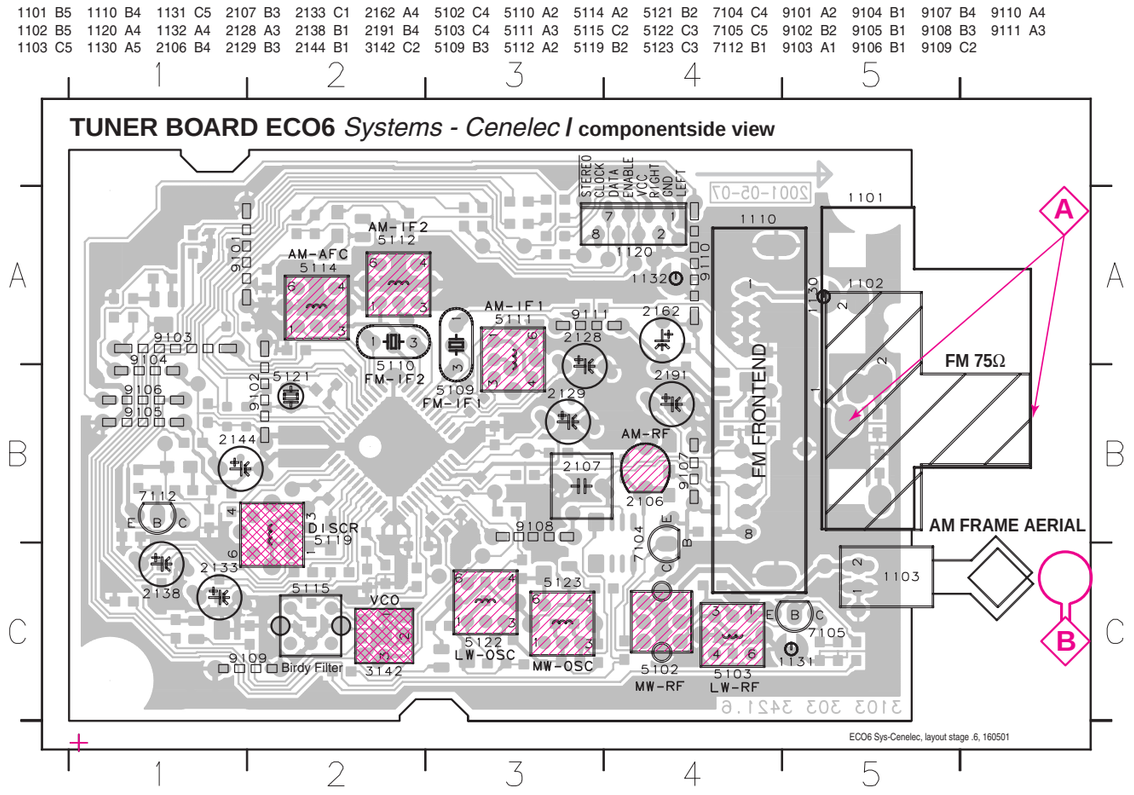
LEGEND

* ... only assembled in FM/AM-version
Ⓟ ...for provision only
USA ... for USA version only
LW ... for LW version only

SMD jumper 41xx 0R

...V FM mode stereo
...V MW mode
...V LW mode
Ⓥ EVM
voltages measured while set is tuned to a strong transmitter

Signal path
FM
AM
MPX (Audio Frequency)
AF - left/right



These assembly drawings show a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

7B-3

TUNER ADJUSTMENT TABLE (**ECO6 Cenelec** FM/MW - and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (50kHz grid)			108MHz	check	1	8V ±1.2V
			87.5MHz	check		1.6V ±0.5V
MW 531 - 1602kHz (9kHz grid)			1602kHz	5123		8V ±0.2V 3-band 6.9V ±0.2V 2-band
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz (3kHz grid)			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
FM - IF						
FM	10.7MHz, 45mV continuous wave	D	IC 7101 21 shortcircuit to block AFC 2141	5119	2	0mV ±3mV
FM - VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz 1)
FM RF (channel separation)	Note: The FM-frontend unit has already been adjusted by the factory and needs therefore no further adjustments for service purposes.					
FM	98MHz, 1mV 90% Left + 9% pilot mod=1kHz	A	98MHz	IF coil inside FM frontend 1110	4	right channel min.
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C Δf = ±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 220R 100nF	5111	5	max. f_o symmetric
			IC 7101 40 220R 100nF see remark 2)	5112		
AM AFC **MW**		C continuous wave V_{RF} = 2mV		5114	2	0mV ±2mV
AM RF 3)						
MW	1494kHz	B Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	5	max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		

ECO6 Sys Cenelec, 190599

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

3) For AM RF adjustments the original frame antenna has to be used! MW has to be aligned before LW.

↕ Repeat

Electrical Partslist *ECO6* SYSTEMS-CENELEC

7B-4

MISCELLANEOUS

1101	2422 015 19376	SOCKET CLICKFIT 2P	USA only
1102	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
1103	4822 265 31184	JST CONNECTOR, 2 POLE	
1110	2422 542 90071	FM FRONTEND	
1120	4822 265 11515	FFC SOCKET, 8P	

CAPACITORS

2102 ©	4822 126 13838	100nF	10%	50V	not USA
2105 ©	4822 126 13838	100nF	10%	50V	USA only
2106	2020 800 00204	TRIMCAP. 4,2 - 20pF, N750			LW only
2106	2020 800 00191	TRIMCAP. 3 - 11pF, N450			FM/AM only
2107	4822 121 51319	1µF	20%	50V	
2108 ©	5322 122 32531	100pF	5%	50V	LW only
2109 ©	5322 122 32448	10pF	5%	50V	LW only
2120 ©	4822 126 13689	18pF	1%	63V	FM/AM only
2120 ©	5322 122 32658	22pF	5%	50V	LW only
2122 ©	4822 122 33891	3,3nF	10%	63V	LW only
2123 ©	2020 552 93494	390pF	1%	50V	LW only
2124 ©	4822 122 33177	10nF	20%	50V	FM/AM only
2125 ©	2020 552 96199	560pF	1%	50V	
2127 ©	4822 126 14076	220nF	20%	25V	
2128	4822 124 40248	10µF	20%	63V	
2129	4822 124 41584	100µF	20%	10V	
2130 ©	5322 122 32654	22nF	10%	63V	
2131 ©	4822 126 13482	470nF	20%	16V	
2132 ©	4822 126 13482	470nF	20%	16V	
2133	4822 124 21913	1µF	20%	63V	
2134 ©	3198 017 31530	15nF	10%	50V	not USA
2134 ©	5322 122 32654	22nF	10%	63V	USA only
2135 ©	3198 017 31530	15nF	10%	50V	not USA
2135 ©	3198 017 32230	22nF	10%	25V	USA only
2136 ©	4822 126 14076	220nF	20%	25V	
2137 ©	4822 126 14076	220nF	20%	25V	
2138	4822 124 22652	2,2µF	20%	50V	
2139 ©	4822 126 14236	15pF	5%	50V	
2140 ©	4822 126 13695	82pF	1%	63V	
2141 ©	4822 126 13838	100nF	10%	50V	
2143 ©	4822 126 14076	220nF	20%	25V	
2144	4822 124 21913	1µF	20%	63V	
2145 ©	4822 122 33575	220pF	5%	50V	
2146 ©	4822 122 33575	220pF	5%	50V	
2147 ©	4822 122 33575	220pF	5%	50V	
2148 ©	4822 122 33127	2,2nF	10%	63V	
2149 ©	5322 122 32659	33pF	5%	50V	RDS only
2150 ©	4822 126 13838	100nF	10%	50V	
2159 ©	5322 122 31151	22µF	20%	50V	
2163 ©	4822 126 13838	100nF	10%	50V	LW only
2164 ©	4822 126 13482	470nF	20%	16V	
2165 ©	4822 126 13838	100nF	10%	50V	
2166 ©	5322 122 31647	1nF	10%	63V	
2167 ©	4822 122 33926	12pF	5%	50V	
2169 ©	4822 122 33127	2,2nF	10%	63V	RDS only
2180 ©	3198 017 31030	10nF	10%	50V	
2190 ©	4822 126 13838	100nF	10%	50V	
2191	4822 124 40178	100µF	20%	10V	

RESISTORS

3105 ©	4822 117 11503	220Ω	5%	0,1W	
3108 ©	4822 117 11449	2,2kΩ	1%	0,1W	LW only
3109 ©	4822 051 20472	4,7kΩ	5%	0,1W	LW only
3123 ©	4822 051 20472	4,7kΩ	5%	0,1W	LW only
3125 ©	4822 117 10833	10kΩ	1%	0,1W	LW only
3128 ©	4822 117 11449	2,2kΩ	1%	0,1W	LW only
3130 ©	3198 021 38210	820Ω	5%	0,06W	
3131 ©	3198 021 38210	820Ω	5%	0,06W	
3132 ©	4822 051 20479	47Ω	5%	0,1W	
3134 ©	4822 051 20223	22kΩ	5%	0,1W	
3135 ©	3198 021 31020	1kΩ	5%	0,06W	
3137 ©	4822 051 20223	22kΩ	5%	0,1W	LW only
3141 ©	4822 117 11148	56kΩ	1%	0,1W	
3142	4822 100 12159	TRIMPOT. 100kΩ			
3143 ©	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144 ©	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145 ©	4822 117 11449	2,2kΩ	1%	0,1W	
3146 ©	4822 051 20229	22Ω	5%	0,1W	
3150 ©	4822 117 10833	10kΩ	1%	0,1W	
3151 ©	4822 051 20683	68kΩ	5%	0,1W	
3152 ©	4822 051 20471	470Ω	5%	0,1W	
3153 ©	4822 051 20471	470Ω	5%	0,1W	
3154 ©	4822 117 13577	330Ω	1%	0,1W	
3155 ©	4822 117 10353	150Ω	5%	0,1W	
3156 ©	4822 117 10837	100kΩ	1%	0,1W	
3157 ©	4822 117 10837	100kΩ	1%	0,1W	
3158 ©	4822 051 20471	470Ω	5%	0,1W	
3159 ©	4822 051 20471	470Ω	5%	0,1W	
3160 ©	4822 051 20471	470Ω	5%	0,1W	
3161 ©	4822 051 20223	22kΩ	5%	0,1W	
3167 ©	4822 051 20121	120Ω	5%	0,1W	
3168 ©	4822 051 20121	120Ω	5%	0,1W	
3169 ©	4822 051 20154	150kΩ	5%	0,1W	
3170 ©	4822 117 10837	100kΩ	1%	0,1W	
3171 ©	4822 117 10834	47kΩ	1%	0,1W	
3172 ©	4822 051 20562	5,6kΩ	5%	0,1W	
3176 ©	4822 051 20333	33kΩ	5%	0,1W	RDS only
3180 ©	4822 117 10833	10kΩ	1%	0,1W	LW only
3190 ©	4822 051 20121	120Ω	5%	0,1W	
3191 ©	4822 051 20121	120Ω	5%	0,1W	
3192 ©	4822 117 13577	330Ω	1%	0,1W	
3193 ©	4822 117 13577	330Ω	1%	0,1W	
3194 ©	4822 117 11449	2,2kΩ	1%	0,1W	
3195 ©	4822 051 20101	100Ω	5%	0,1W	
4101 ©	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4102 ©	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4104 ©	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4105 ©	4822 051 20008	CHIP JUMPER 0805			
4106 ©	4822 051 20008	CHIP JUMPER 0805			
4107 ©	4822 051 20008	CHIP JUMPER 0805			

COILS

5102	4822 157 71634	RF-COIL MW	
5103	2422 549 44107	RF-COIL LW	LW only
5109	4822 157 71639	FM-IF FILTER 10,7MHz	
5110	4822 242 70665	FM-IF FILTER 10,7MHz	
5111	2422 549 44023	AM-IF FILTER 450kHz	
5112	4822 157 70302	AM-IF FILTER 450kHz	
5114	4822 157 70302	AM-IF FILTER 450kHz	
5115	4822 157 71636	ANTI BIRDY FILTER	
5118 ©	2422 535 95881	100nH	
5119	4822 157 11443	DISCRIMINATOR COIL	
5121	4822 242 10261	QUARTZ 75kHz	
5122	2422 549 44108	RF-COIL, LW-OSCILLATOR	LW only
5123	2422 549 44108	RF-COIL, MW-OSCILLATOR	

DIODES

6105 ©	4822 130 83075	HN1V02H	
6106 ©	4822 130 83757	BAS216	
6107 ©	9340 386 90115	BZX284-C11	
6120 ©	4822 130 83757	BAS216	

TRANSISTORS

7103 ©	5322 130 42756	BC857C	RDS only
7104	9322 003 64676	TBC337-40	LW only
7105	9322 003 64676	TBC337-40	LW only
7109 ©	4822 130 60373	BC856B	LW only
7110 ©	4822 130 60373	BC856B	
7111 ©	5322 130 42755	BC847C	
7112	4822 130 44503	BC547C	
7122 ©	5322 130 42755	BC847C	LW only
7124 ©	5322 130 42755	BC847C	LW only

INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1, RADIO IC

COMBI BOARD

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8-1

Brief introduction of the Combi Board

The Combi Board consists of both audio signals processing part (AF Part) and microprocessor controlling part (Control Part).

a. Audio Processor IC TDA7468D
Audio Processor IC TDA7468D includes functions such as source selection, loudness control, bass control, treble control and muting function. Sound features such as IS are controllable via I2C bus. All input sources are used namely, Stereo 1-4 and Differential input. Mono input is unused and terminated to ground via capacitor.

b. Line out
Line out cinch is included for connection to external devices such as amplifier, recorder etc.

c. Simple Incredible Surround (SIS)
Incredible surround effect using external circuit to create phase shifting and spatial effect.

d. Headphone Amplifier
A Headphone can be driven by Op-amp NJM4556AM.

e. Headphone Sensing
Headphone sense circuit is for muting main speaker when headphone is plugged in.

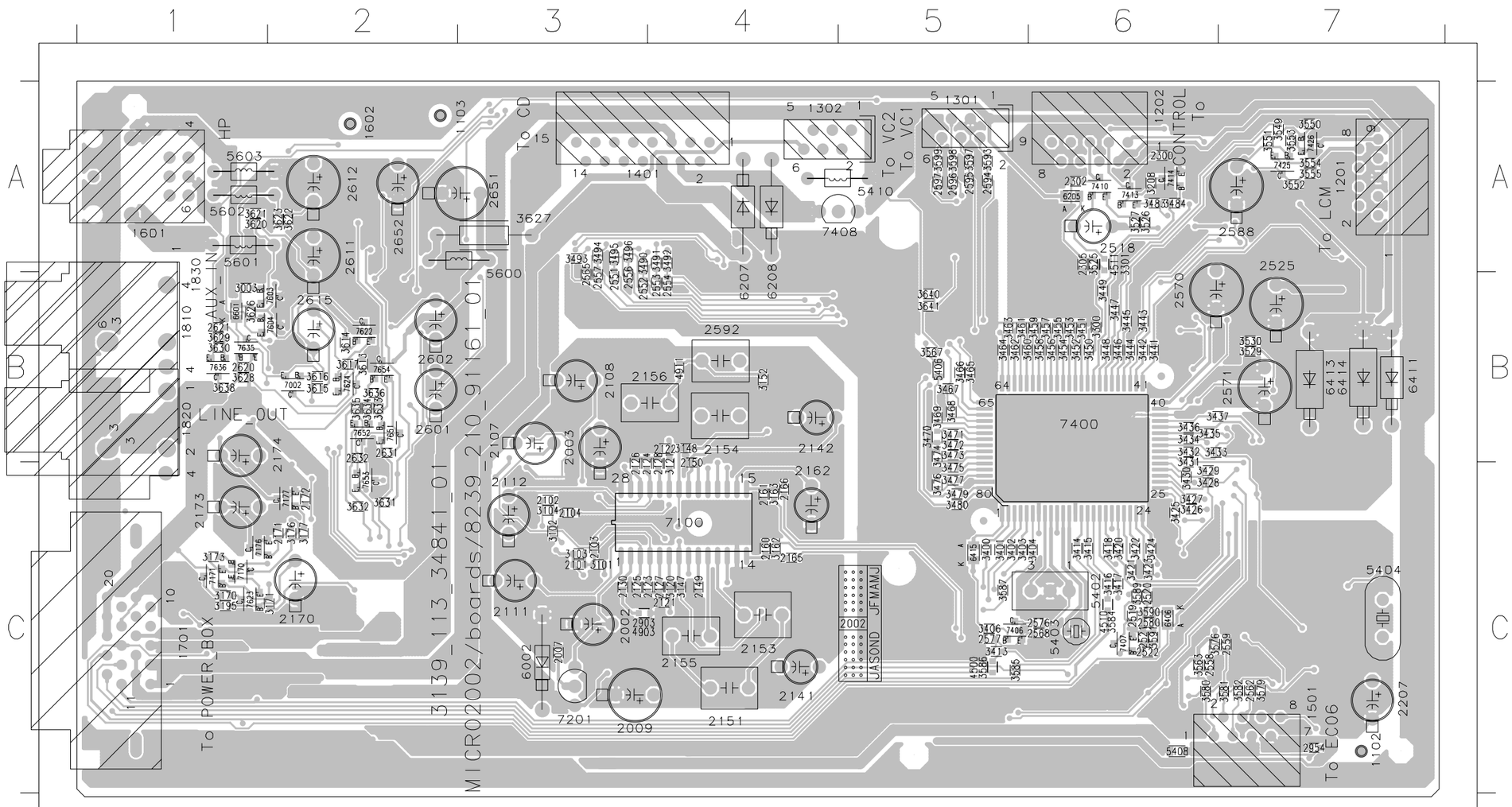
f. CD Standby Control
Control circuit that switches on the supply to CD servo IC, HF circuit and laser light pen in CD mode only.

g. CD_ON Control
This switches on the +5V_CD (derived from +5V6) to the CD module.

8-2

COMBI BOARD - TOP VIEW LAYOUT

1102 C7	2107 B3	2160 C4	2553 B4	2611 A2	3163 C4	3420 C6	3445 B6	3467 B5	3525 A6	3587 C5	3631 C2	5602 A1	7408 A5
1103 A3	2108 B3	2161 C4	2554 B4	2612 A2	3170 C1	3421 C6	3446 B6	3468 B5	3526 A6	3589 C6	3632 C2	5603 A1	7410 A6
1201 A7	2111 C3	2162 C4	2556 B3	2615 B2	3171 C2	3422 C6	3447 B6	3469 B5	3527 A6	3590 C6	3633 B2	6002 C3	7413 A6
1202 A6	2112 C3	2165 C4	2557 B3	2620 B1	3173 C1	3423 C6	3448 B6	3470 B5	3529 B7	3591 C6	3634 B2	6205 A6	7414 A6
1301 A5	2121 C4	2166 C4	2558 C6	2621 B1	3176 C2	3424 C6	3449 B6	3471 B5	3530 B7	3593 A5	3635 B2	6207 B4	7425 A7
1302 A4	2122 B4	2170 C2	2559 C7	2631 B2	3177 C2	3425 C6	3450 B6	3472 B5	3549 A7	3597 A5	3636 B2	6208 B4	7426 A7
1401 A3	2123 C3	2171 C2	2562 C7	2632 B2	3195 C1	3426 C6	3451 B6	3473 B5	3550 A7	3598 A5	3638 B1	6406 C6	7603 B2
1501 C7	2124 C3	2172 C2	2565 B3	2651 A3	3208 A6	3427 C6	3452 B6	3474 B5	3551 A7	3599 A5	3640 B5	6411 B7	7604 B2
1601 A1	2125 C3	2173 C1	2568 C6	2652 A2	3300 B6	3428 C6	3453 B6	3475 C5	3552 A7	3613 B2	3641 B5	6413 B7	7622 B2
1602 A2	2126 C3	2174 B2	2570 B6	2903 C3	3301 A6	3429 C6	3454 B6	3476 C5	3553 A7	3614 B2	4500 C5	6414 B7	7623 C1
1701 C1	2127 C4	2207 C7	2571 B7	2954 C7	3400 C5	3430 C6	3455 B6	3477 C5	3554 A7	3615 B2	4510 C6	6415 C5	7624 B2
1810 B1	2128 C4	2300 A6	2576 C6	3003 B1	3401 C5	3431 C6	3456 B6	3479 C5	3555 A7	3616 B2	4511 A6	6601 B1	7635 B1
1820 B1	2130 C3	2302 A6	2577 C5	3101 C3	3402 C5	3432 B6	3457 B6	3480 C5	3563 C6	3617 B2	4903 C3	7002 B2	7636 B1
1830 B1	2141 C4	2305 A6	2580 C6	3102 C3	3403 C5	3433 B6	3458 B6	3483 A6	3567 B5	3620 A1	4911 B4	7100 C4	7651 B2
2002 C3	2142 B4	2518 A6	2588 A7	3103 C3	3404 C6	3434 B6	3459 B6	3484 A6	3576 C6	3621 A1	5402 C6	7170 C1	7652 B2
2003 B3	2149 C4	2519 C6	2592 B4	3104 C3	3406 C5	3435 B6	3460 B5	3490 A3	3579 C7	3622 A2	5403 C6	7171 C1	7653 C2
2007 C3	2150 C4	2520 C6	2594 A5	3120 C4	3413 C5	3436 B6	3461 B5	3491 A4	3580 C6	3623 A2	5404 C7	7176 C1	7654 B2
2009 C3	2151 C4	2521 C6	2595 A5	3121 C4	3414 C6	3437 B6	3462 B5	3492 A4	3581 C7	3626 B1	5406 B5	7177 C2	
2101 C3	2153 C4	2522 C6	2596 A5	3147 C4	3415 C6	3441 B6	3463 B5	3493 A3	3582 C7	3627 A3	5408 C6	7201 C3	
2102 C3	2154 B4	2525 A7	2597 A5	3148 B4	3416 C6	3442 B6	3464 B5	3494 A3	3584 C6	3628 B1	5410 A5	7400 B6	
2103 C3	2155 C4	2551 B3	2601 B2	3152 B4	3417 C6	3443 B6	3465 B5	3495 A3	3585 C5	3629 B1	5600 B3	7406 C5	
2104 C3	2156 B4	2552 B3	2602 B2	3162 C4	3418 C6	3444 B6	3466 B5	3496 A3	3586 C5	3630 B1	5601 A1	7407 C6	



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

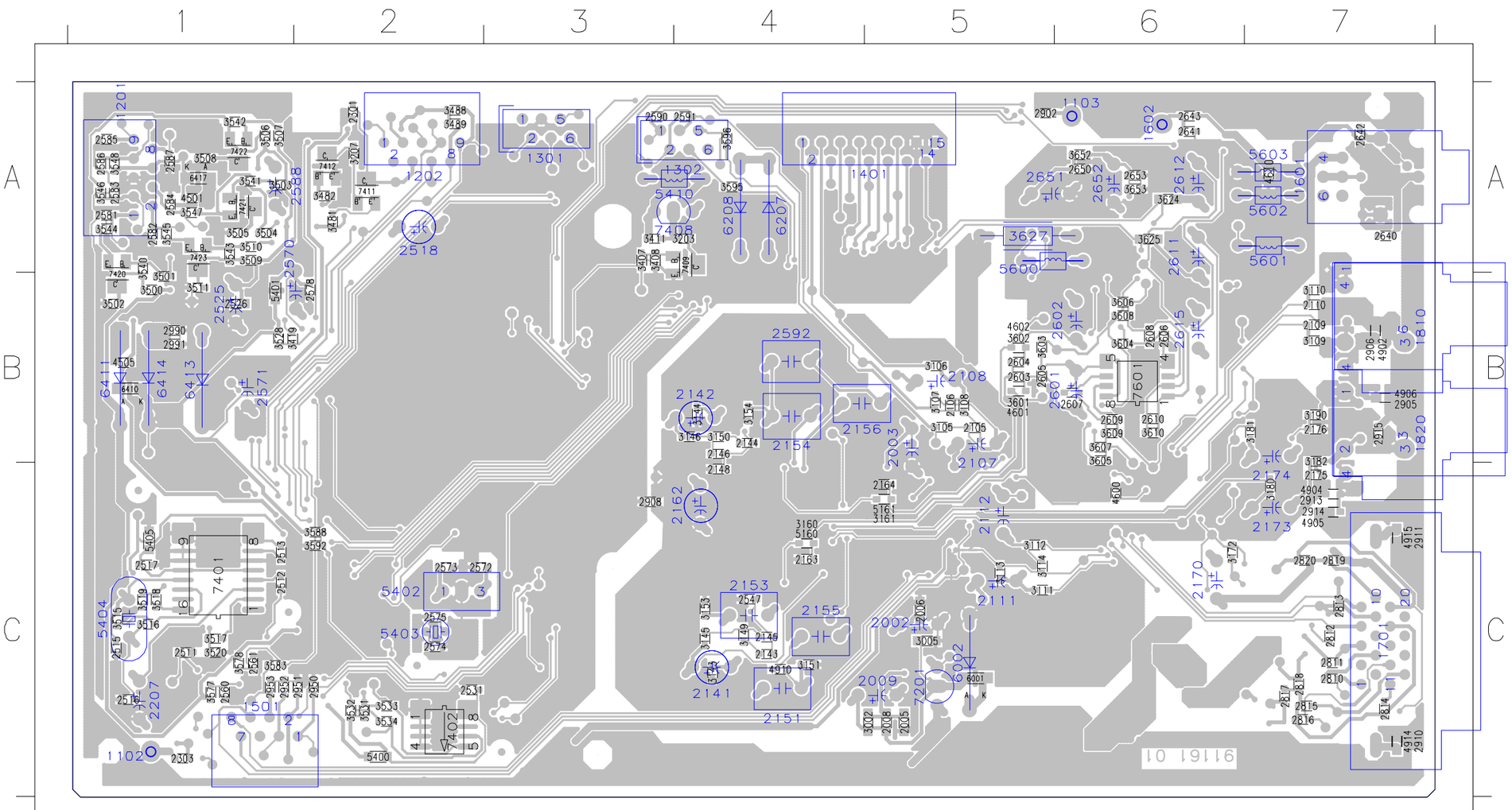
3139 113 3484 pt1 dd wk0226

8-3

COMBI BOARD - BOTTOM VIEW LAYOUT

1102 C1	1302 A4	1701 C7	2009 C5	2141 C4	2155 C4	2174 C7	2571 B1	2611 A6	3627 A5	5600 A5	6207 A4	7201 C5	
1103 A6	1401 A5	1810 B7	2107 C5	2142 B4	2156 B4	2207 C1	2588 A1	2612 A6	5402 C2	5601 A7	6208 A4	7408 A3	
1201 A1	1501 C1	1820 B7	2108 B5	2151 C4	2162 C4	2518 A2	2592 B4	2615 B6	5403 C2	5602 A7	6411 B1		
1202 A2	1601 A7	2002 C5	2111 C5	2153 C4	2170 C6	2525 B1	2601 B5	2651 A5	5404 C1	5603 A7	6413 B1		
1301 A3	1602 A6	2003 B5	2112 C5	2154 B4	2173 C7	2570 B1	2602 B5	2652 A6	5410 A4	6002 C5	6414 B1		

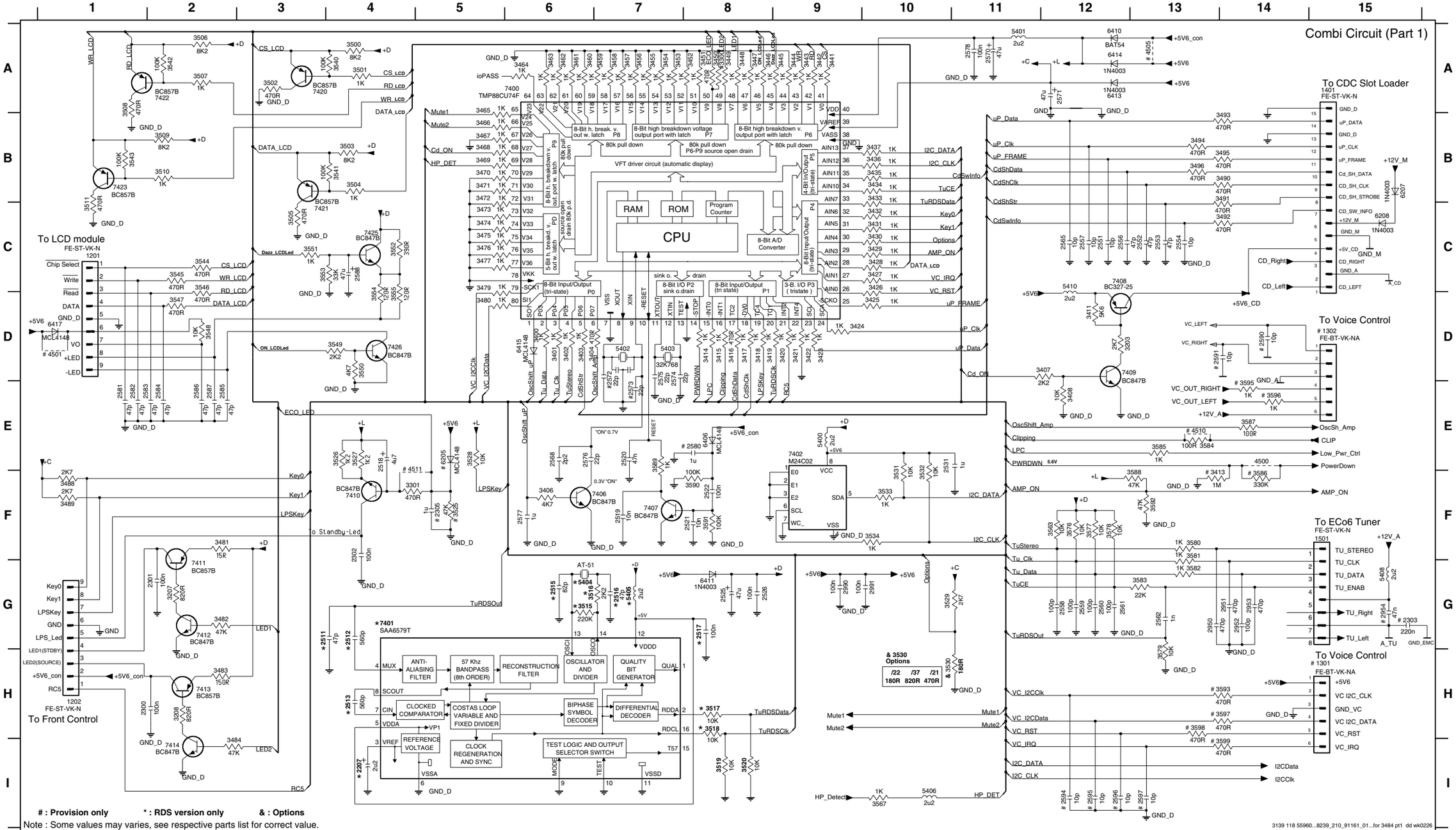
2005 C5	2176 B7	2573 C2	2605 B5	2813 C7	2914 C7	3110 B7	3161 C5	3489 A2	3517 C1	3546 A1	3606 B6	4902 B7	7401 C1	
2006 C5	2301 A2	2574 C2	2606 B6	2814 C7	2915 B7	3111 C5	3172 C6	3500 B1	3518 C1	3547 A1	3607 B6	4904 C7	7402 C2	
2008 C5	2303 C1	2575 C2	2607 B6	2815 C7	2950 C2	3112 C5	3180 C7	3501 B1	3519 C1	3548 A1	3608 B6	4905 C7	7409 A4	
2105 B5	2511 C1	2578 B2	2608 B6	2816 C7	2951 C2	3113 C5	3181 B7	3502 B1	3520 C1	3577 C1	3609 B6	4906 B7	7411 A2	
2106 B5	2512 C1	2581 A1	2609 B6	2817 C7	2952 C1	3114 C5	3182 B7	3503 A1	3528 B1	3578 C1	3610 B6	4910 C4	7412 A2	
2109 B7	2513 C1	2582 A1	2610 B6	2818 C7	2953 C1	3143 C4	3190 B7	3504 A1	3531 C2	3583 C1	3624 A6	4914 C7	7420 B1	
2110 B7	2515 C1	2583 A1	2640 A7	2819 C7	2990 B1	3144 B4	3203 A4	3505 A1	3532 C2	3588 C2	3625 A6	4915 C7	7421 A1	
2143 C4	2516 C1	2584 A1	2641 A6	2820 C7	2991 B1	3145 C4	3207 A2	3506 A1	3533 C2	3592 C2	3652 A6	5160 C4	7422 A1	
2144 B4	2517 C1	2585 A1	2642 A7	2902 A5	3002 C5	3146 B4	3407 A3	3507 A1	3534 C2	3595 A4	3653 A6	5161 C5	7423 A1	
2145 C4	2526 B1	2586 A1	2643 A6	2905 B7	3005 C5	3149 C4	3408 A3	3508 A1	3540 A1	3596 A4	4501 A1	5400 C2	7601 B6	
2146 B4	2531 C2	2587 A1	2650 A6	2906 B7	3105 B5	3150 B4	3411 A3	3509 A1	3541 A1	3601 B5	4505 B1	5401 B1		
2148 C4	2547 C4	2590 A3	2653 A6	2908 C3	3106 B5	3151 C4	3419 B1	3510 A1	3542 A1	3602 B5	4600 C6	5405 C1		
2163 C4	2560 C1	2591 A4	2810 C7	2910 C7	3107 B5	3153 C4	3481 A2	3511 B1	3543 A1	3603 B5	4601 B5	6001 C5		
2164 C5	2561 C1	2603 B5	2811 C7	2911 C7	3108 B5	3154 B4	3482 A2	3515 C1	3544 A1	3604 B6	4602 B5	6410 B1		
2175 C7	2572 C2	2604 B5	2812 C7	2913 C7	3109 B7	3160 C4	3488 A2	3516 C1	3545 A1	3605 B6	4610 A7	6417 A1		



8-4

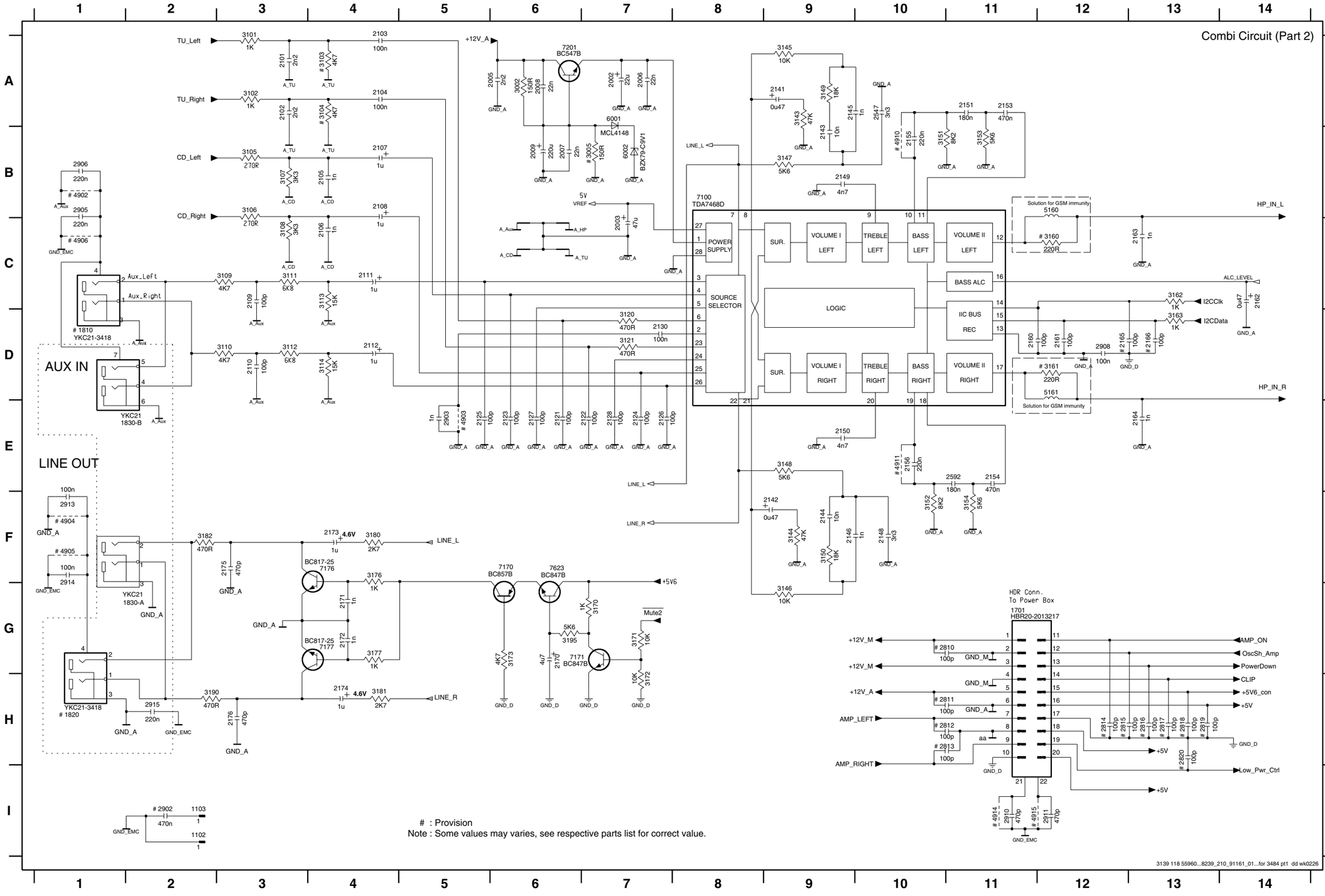
COMBI BOARD - CIRCUIT DIAGRAM (PART 1)

1201 C1 2301 G2 2516 G7 2526 G8 2558 G12 2571 A12 2580 E8 2588 C4 2951 G14 3208 H2 3406 F6 3417 D8 3425 D10 3433 B10 3444 A9 3452 A8 3460 A6 3468 B5 3476 C5 3488 F1 3496 B13 3507 A2 3518 H8 3530 H10 3543 B1 3551 C3 3577 F12 3585 E13 3593 H14 4505 A13 5405 G7 6410 A12 7402 E9 7413 H2
1202 H1 2302 F4 2517 G8 2531 E10 2559 G12 2572 D7 2581 E1 2590 D14 2952 G14 3300 A8 3407 D12 3418 D8 3426 C10 3434 B10 3445 A9 3453 A7 3461 A6 3469 B5 3477 C5 3489 F1 3500 A4 3508 A1 3519 I8 3531 F10 3544 C2 3552 C4 3578 F12 3586 F14 3595 E14 4510 E13 5406 I10 6411 G8 7406 F6 7414 I2
1301 H15 2303 G15 2518 E4 2551 C12 2560 G12 2573 E7 2582 E1 2591 D13 2953 G14 3301 F4 3408 E12 3419 D8 3427 C10 3435 B10 3446 A8 3454 A7 3462 A6 3470 B5 3479 C5 3490 B14 3501 A4 3509 B2 3520 I8 3532 F10 3545 C2 3553 C3 3579 H13 3587 E14 3596 E14 4511 E4 5408 G15 6413 A12 7407 F7 7420 A4
1302 D15 2305 F5 2519 F7 2552 C13 2561 G12 2574 D7 2583 E1 2594 I12 2954 G15 3400 D6 3409 D6 3411 D12 3420 D9 3428 C10 3436 B10 3447 A8 3455 A7 3463 A6 3471 B5 3480 D5 3491 B14 3502 A3 3510 B2 3525 F5 3533 F10 3546 C2 3554 D4 3580 F13 3588 F13 3597 H14 5400 E9 5410 C12 6414 A12 7408 C12 7421 C4
1401 A15 2511 G3 2520 E7 2553 C13 2562 G13 2575 D7 2584 E2 2595 I12 2990 G9 3001 D6 3402 D6 3413 F13 3421 D9 3429 C10 3437 B10 3448 A8 3456 A7 3464 A6 3472 B5 3481 F2 3492 C14 3503 B4 3511 C1 3526 E4 3534 F10 3547 D2 3555 D4 3581 F13 3589 E7 3598 H13 5401 A11 6205 E5 6415 D6 7409 D12 7422 A2
1501 F15 2512 G4 2521 F8 2554 C13 2565 C12 2576 E6 2585 E2 2596 I12 2991 G10 3203 D12 3303 D6 3414 D8 3422 D9 3430 C10 3441 A9 3449 A8 3457 A7 3465 A5 3473 C5 3482 G2 3493 B14 3504 B4 3512 A3 3527 E4 3540 A4 3548 D2 3556 D4 3582 G13 3590 F8 3599 I14 5402 D7 6207 B15 6417 D1 7410 F4 7423 B1
2207 I4 2513 H4 2522 F8 2555 C13 2566 E6 2577 F6 2586 E2 2597 I13 3203 D12 3303 D6 3415 D8 3423 D9 3431 C10 3442 A9 3450 A8 3458 A7 3466 B5 3474 C5 3483 H2 3494 B13 3505 C3 3513 G6 3528 E5 3541 B4 3549 D4 3557 I10 3583 G13 3591 F8 4500 E14 5403 D7 6208 C15 7400 A6 7411 G2 7425 C4
2300 H1 2515 G6 2525 G8 2557 C12 2570 A11 2578 A11 2587 E2 2950 G13 3207 G2 3404 D6 3416 D8 3424 D9 3432 C10 3443 A9 3451 A8 3459 A7 3467 B5 3475 C5 3484 I2 3495 B14 3506 A2 3517 H8 3529 G10 3542 A2 3550 D4 3576 F12 3584 E13 3592 F13 4501 D1 5404 G6 6406 E8 7401 G4 7412 G2 7426 D4



8-5

COMBI BOARD - CIRCUIT DIAGRAM (PART 2)



1102 I2
1103 I2
1701 G11
1810 D1
1820 H1
1830-A G2
1830-B E2
2002 A7
2003 C7
2005 A6
2006 A7
2007 B6
2008 A6
2009 B6
2101 A3
2102 A3
2103 A4
2104 A4
2105 B4
2106 C4
2107 B4
2108 B4
2109 C3
2110 D3
2111 C4
2112 D4
2121 E6
2122 E7
2123 E6
2124 E7
2125 E5
2126 E7
2127 E6
2128 E7
2130 D7
2141 A9
2142 F9
2143 B9
2144 F9
2145 A9
2146 F9
2148 F10
2149 B9
2150 E9
2151 A11
2153 A11
2154 E11
2155 B10
2156 E10
2160 D11
2161 D12
2162 C14
2163 C13
2164 E13
2165 D12
2166 D13
2170 G6
2171 G4
2172 G4
2173 F4
2174 H4
2175 F3
2176 H3
2547 A10
2592 E11
2810 C11
2811 H11
2812 H11
2813 H11
2814 H12
2815 H12
2816 H13
2817 H13
2818 H13
2819 H13
2820 H13
2902 I2
2903 E5
2905 B1
2906 B1
2908 D12
2910 I11
2911 I12
2913 F1
2914 F1
2915 H2
3002 A6
3005 B7
3101 A3
3102 A3
3103 A4
3104 A4
3105 B3
3106 B3
3107 B3
3108 C3
3109 C3
3110 D3
3111 C3
3112 D3
3113 C4
3114 D4
3120 D7
3121 D7
3143 A9
3144 F9
3145 A9
3146 G9
3147 B9
3148 E9
3149 A9
3150 F9
3151 B10
3152 F10
3153 B11
3154 F11
3160 C12
3161 D12
3162 C13
3163 D13
3170 G7
3171 G7
3172 H7
3173 G6
3176 F4
3177 G4
3180 F4
3181 H4
3182 F2
3190 H2
3195 G6
4902 B1
4903 E5
4904 F1
4905 F1
4906 C1
4910 B10
4911 E10
4914 I11
4915 I11
5160 D12
5161 D12
6001 A7
6002 B7
7100 B8
7170 F6
7171 G6
7176 F4
7177 G4
7201 A6
7623 F6

8-6

COMBI BOARD - CIRCUIT DIAGRAM (PART 3)

1601 E13 1602 C13 2601 C1 2602 F1 2603 D1 2604 F1 2605 C2 2606 F2 2607 D2 2608 F2 2609 D2 2610 E2 2611 C4 2612 F4 2615 E5 2620 D8 2621 E10 2631 B9 2632 C9 2640 C12 2641 C13 2642 C12 2643 C13 2650 B4 2651 B5 2652 B5 2653 B5 3003 D6 3601 C1 3602 F1 3603 C2 3604 F2 3605 D1 3606 E1 3607 D1 3608 E1 3609 D2 3610 E2 3613 D4 3614 E5 3615 E4 3616 E4 3617 D5 3620 C5 3621 C5 3622 F5 3623 F5 3624 F5 3625 C5 3626 E6 3627 A3 3628 D8 3629 E9 3630 E8 3631 A8 3632 C8 3633 B8 3634 B8 3635 B7 3636 B7 3638 E8 3640 D10 3641 D10 3652 A4 3653 B4 4600 B4 4601 C1 4602 F1 4610 C13 5600 A3 5601 C11 5602 D11 5603 C13 6601 C6 7002 E4 7601-A F2 7601-B C2 7603 D6 7604 E6 7622 D5 7624 D5 7635 D8 7636 E8 7651 B9 7652 C9 7653 D7 7654 C7

Combi Circuit (Part 3)

+12V_A
10R
3627
5600
2u2
B_REF3
3652
4K7
HPREF
2650
22n
2651
47u
3653
4K7
2652
100u
2653
22n
4600
aa
A_HP
VC_OUT_LEFT
3631
1K
AMP_LEFT
BC817-25
7653
3635
1K
3633
1K
7651
BC817-25
2631
100p
aa
BC817-25
7654
3636
1K
3634
1K
7652
BC817-25
2632
100p
3632
1K
AMP_RIGHT
To Power Module
3625
1K
4601
HP_IN_L
3601
220R
2601
0u47
3603
12K
2605
100p
B_REF3
NJM4556AM
7601-B
2607
470p
2603
1n
GND_A
2611
22u
MUTE_SW
MCL4148
6601
3620
47R
3621
33R
HP_LEFT
5601
2u2
4610
2640
22n
5603
2u2
2641
22n
2642
22n
2643
100n
1602
RT-01T
HEADPHONE
SOCKET
1601
TC38
HP_GND
7624
BC847B
7622
BC857B
+5V6
3613
1K
3617
5K6
3003
1K
7603
BC817-25
7635
BC857B
100p
2620
4K7
3628
3640
5K6
1K
3641
HP_Detect
HP_RIGHT
5602
2u2
HPREF
3607
6K8
2609
180p
VC_LEFT
3605
1K
3609
27K
Mute1
3615
10K
3616
10K
7002
BC847B
2615
10u
3614
4K7
GND_D
A_HP
7604
BC817-25
3626
1K
4K7
3638
7636
BC847B
3629
10K
3630
10K
2621
100p
VC_RIGHT
3606
1K
3610
27K
HPREF
3608
6K8
2610
180p
4602
HP_IN_R
3602
220R
2602
0u47
2608
470p
3604
12K
2606
100p
2604
1n
7601-A
NJM4556AM
2612
22u
3622
47R
3623
33R
3624
1K
VC_OUT_RIGHT

: Provision

Note : Some values may varies, see respective parts list for correct value.

8-7

ELECTRICAL PARTS LIST - COMBI BOARD

ELECTRICAL PARTS LIST - COMBI BOARD

MISCELLANEOUS

1201	4822 265 11531	Flex Connector 9P
1202	4822 265 11531	Flex Connector 9P
1401	4822 265 10979	Flex Connector 15P
1501	4822 265 11535	Flex Connector 8P
1601	4822 265 11529	Headphone Socket
1701	2422 025 17816	CON BM H 20P F 1.27 DFP B
1830	4822 267 31823	Cinch Socket - Aux in/Line out

CAPACITORS

2002	4822 124 81151	22uF 50V
2003	4822 124 41751	47uF 20% 50V
2005	4822 126 14238	2,2nF 50V
2006	4822 126 14494	22nF 10% 25V
2007	4822 126 14494	22nF 10% 25V
2008	4822 126 14494	22nF 10% 25V
2009	4822 124 40196	220uF 20% 16V
2103	2238 586 59812	100nF +80/-20% 50V
2104	2238 586 59812	100nF +80/-20% 50V
2105	3198 016 31020	1nF 25V
2106	3198 016 31020	1nF 25V
2107	4822 124 40756	1uF 20% 100V
2108	4822 124 40756	1uF 20% 100V
2109	2020 552 94427	100pF 5% 50V
2110	2020 552 94427	100pF 5% 50V
2111	4822 124 40756	1uF 20% 100V
2112	4822 124 40756	1uF 20% 100V
2121	2020 552 94427	100pF 5% 50V
2122	2020 552 94427	100pF 5% 50V
2123	2020 552 94427	100pF 5% 50V
2124	2020 552 94427	100pF 5% 50V
2125	2020 552 94427	100pF 5% 50V
2126	2020 552 94427	100pF 5% 50V
2127	2020 552 94427	100pF 5% 50V
2128	2020 552 94427	100pF 5% 50V
2130	2238 586 59812	100nF +80/-20% 50V
2141	5322 124 41948	470nF 20% 50V
2142	5322 124 41948	470nF 20% 50V
2143	5322 126 11583	10nF 10% 50V
2144	5322 126 11583	10nF 10% 50V
2145	3198 016 31020	1nF 25V
2146	3198 016 31020	1nF 25V
2148	5322 126 11579	3,3nF 10% 63V
2149	4822 126 13193	4,7nF 10% 63V
2150	4822 126 13193	4,7nF 10% 63V
2151	4822 121 51356	180nF 10% 63V
2153	4822 121 51252	470nF 5% 63V
2154	4822 121 51252	470nF 5% 63V
2155	4822 121 42408	220nF 5% 63V
2156	4822 121 42408	220nF 5% 63V
2160	2020 552 94427	100pF 5% 50V
2161	2020 552 94427	100pF 5% 50V
2162	5322 124 41948	470nF 20% 50V
2163	3198 016 31020	1nF 25V
2164	3198 016 31020	1nF 25V
2170	4822 124 40769	4,7uF 20% 100V
2171	3198 016 31020	1nF 25V
2172	3198 016 31020	1nF 25V
2173	4822 124 40756	1uF 20% 100V
2174	4822 124 40756	1uF 20% 100V
2175	4822 126 13881	470pF 5% 50V
2176	4822 126 13881	470pF 5% 50V
2300	2238 586 59812	100nF +80/-20% 50V
2301	2238 586 59812	100nF +80/-20% 50V
2302	2238 586 59812	100nF +80/-20% 50V
2518	4822 124 40769	4,7uF 20% 100V
2519	5322 126 11583	10nF 10% 50V
2520	3198 017 34730	47nF 16V
2521	5322 126 11583	10nF 10% 50V
2522	2238 586 59812	100nF +80/-20% 50V
2525	4822 124 41751	47uF 20% 50V
2526	2238 586 59812	100nF +80/-20% 50V
2531	3198 017 41050	1uF 10V
2547	5322 126 11579	3,3nF 10% 63V
2551	4822 122 33741	10pF 10% 50V
2552	4822 126 11785	47pF 5% 50V
2553	4822 126 11785	47pF 5% 50V
2554	4822 122 33741	10pF 10% 50V
2556	4822 126 11785	47pF 5% 50V
2557	4822 122 33741	10pF 10% 50V
2558	2020 552 94427	100pF 5% 50V
2559	2020 552 94427	100pF 5% 50V
2560	2020 552 94427	100pF 5% 50V
2561	2020 552 94427	100pF 5% 50V
2562	3198 016 31020	1nF 25V
2565	4822 122 33741	10pF 10% 50V
2568	4822 126 14223	2,2pF 50V
2570	4822 124 41751	47uF 20% 50V
2571	4822 124 41751	47uF 20% 50V
2574	4822 122 33761	22pF 5% 50V
2575	4822 122 33761	22pF 5% 50V
2576	4822 122 33761	22pF 5% 50V
2577	3198 017 41050	1uF 10V
2578	2238 586 59812	100nF +80/-20% 50V
2581	4822 126 11785	47pF 5% 50V
2582	4822 126 11785	47pF 5% 50V
2583	4822 126 11785	47pF 5% 50V
2584	4822 126 11785	47pF 5% 50V
2585	4822 126 11785	47pF 5% 50V
2586	4822 126 11785	47pF 5% 50V
2587	4822 126 11785	47pF 5% 50V
2588	4822 124 40433	47uF 20% 25V
2592	4822 121 51356	180nF 10% 63V
2601	4822 124 41407	0,47uF 20% 63V
2602	4822 124 41407	0,47uF 20% 63V
2603	3198 016 31020	1nF 25V
2604	3198 016 31020	1nF 25V
2605	2020 552 94427	100pF 5% 50V
2606	2020 552 94427	100pF 5% 50V
2607	4822 126 13881	470pF 5% 50V
2608	4822 126 13881	470pF 5% 50V
2609	4822 126 14508	180pF 5% 50V
2610	4822 126 14508	180pF 5% 50V
2611	4822 124 81151	22uF 50V
2612	4822 124 81151	22uF 50V
2615	4822 124 40248	10uF 20% 63V
2620	2020 552 94427	100pF 5% 50V
2621	2020 552 94427	100pF 5% 50V
2631	2020 552 94427	100pF 5% 50V
2632	2020 552 94427	100pF 5% 50V
2640	4822 126 14494	22nF 10% 25V
2641	4822 126 14494	22nF 10% 25V
2642	4822 126 14494	22nF 10% 25V
2643	2238 586 59812	100nF +80/-20% 50V
2650	3198 017 42230	22nF 50V
2651	4822 124 41751	47uF 20% 50V
2652	4822 124 41584	100uF 20% 10V
2653	3198 017 42230	22nF 50V
2903	5322 126 11578	1nF 10% 50V
2905	4822 126 13879	220nF +80/-20% 16V
2906	4822 126 13879	220nF +80/-20% 16V
2908	2238 586 59812	100nF +80/-20% 50V
2910	4822 126 13881	470pF 5% 50V
2911	4822 126 13881	470pF 5% 50V
2913	2238 586 59812	100nF +80/-20% 50V
2914	2238 586 59812	100nF +80/-20% 50V
2915	4822 126 13879	220nF +80/-20% 16V
2950	4822 126 13881	470pF 5% 50V
2951	4822 126 13881	470pF 5% 50V
2952	2020 552 94427	100pF 5% 50V
2953	4822 126 13881	470pF 5% 50V
2990	2238 586 59812	100nF +80/-20% 50V
2991	2238 586 59812	100nF +80/-20% 50V

RESISTORS

3002	4822 051 30151	150R 5% 0,062W
3003	4822 051 30102	1k 5% 0,062W
3101	4822 051 30102	1k 5% 0,062W
3102	4822 051 30102	1k 5% 0,062W
3105	4822 051 30271	270R 5% 0,062W
3106	4822 051 30271	270R 5% 0,062W
3107	4822 051 30332	3k3 5% 0,062W
3108	4822 051 30332	3k3 5% 0,062W
3109	4822 051 30472	4k7 5% 0,062W
3110	4822 051 30472	4k7 5% 0,062W
3111	4822 051 30682	6k8 5% 0,062W
3112	4822 051 30682	6k8 5% 0,062W
3113	4822 051 30153	15k 5% 0,062W
3114	4822 051 30153	15k 5% 0,062W
3120	4822 051 30471	470R 5% 0,062W
3121	4822 051 30471	470R 5% 0,062W
3143	4822 117 12925	47k 1% 0,063W
3144	4822 117 12925	47k 1% 0,063W
3145	4822 051 30103	10k 5% 0,062W
3146	4822 051 30103	10k 5% 0,062W
3147	4822 051 30562	5k6 5% 0,063W
3148	4822 051 30562	5k6 5% 0,063W
3149	4822 051 30183	18k 5% 0,062W
3150	4822 051 30183	18k 5% 0,062W
3151	4822 117 12902	8k2 1% 0,063W
3152	4822 117 12902	8k2 1% 0,063W
3153	4822 051 30562	5k6 5% 0,063W
3154	4822 051 30562	5k6 5% 0,063W
3162	4822 051 30102	1k 5% 0,062W
3163	4822 051 30102	1k 5% 0,062W
3170	4822 051 30102	1k 5% 0,062W
3171	4822 051 30103	10k 5% 0,062W
3172	4822 051 30103	10k 5% 0,062W
3173	4822 051 30472	4k7 5% 0,062W
3176	4822 051 30102	1k 5% 0,062W
3177	4822 051 30102	1k 5% 0,062W
3180	4822 051 30272	2k7 5% 0,062W
3181	4822 051 30272	2k7 5% 0,062W
3182	4822 051 30471	470R 5% 0,062W
3190	4822 051 30471	470R 5% 0,062W
3195	4822 051 30562	5k6 5% 0,063W
3203	4822 051 30272	2k7 5% 0,062W
3207	4822 117 12968	820R 5% 0,62W
3208	4822 117 12968	820R 5% 0,62W
3301	4822 051 30471	470R 5% 0,062W
3400	4822 051 30102	1k 5% 0,062W
3401	4822 051 30102	1k 5% 0,062W
3402	4822 051 30102	1k 5% 0,062W
3403	4822 051 30102	1k 5% 0,062W
3404	4822 051 30471	470R 5% 0,062W
3406	4822 051 30472	4k7 5% 0,062W
3407	4822 051 30222	2k2 5% 0,062W
3408	4822 051 30103	10k 5% 0,062W
3411	4822 051 30562	5k6 5% 0,063W
3414	4822 051 30102	1k 5% 0,062W
3415	4822 051 30102	1k 5% 0,062W
3416	4822 051 30471	470R 5% 0,062W
3417	4822 051 30102	1k 5% 0,062W
3418	4822 051 30102	1k 5% 0,062W
3419	4822 051 30102	1k 5% 0,062W
3420	4822 051 30102	1k 5% 0,062W
3421	4822 051 30102	1k 5% 0,062W
3422	4822 051 30102	1k 5% 0,062W
3423	4822 051 30102	1k 5% 0,062W

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ELECTRICAL PARTS LIST - COMBI BOARD

ELECTRICAL PARTS LIST - COMBI BOARD

RESISTORS

3424	4822 051 30102	1k 5% 0,062W
3425	4822 051 30102	1k 5% 0,062W
3426	4822 051 30102	1k 5% 0,062W
3427	4822 051 30102	1k 5% 0,062W
3428	4822 051 30102	1k 5% 0,062W
3429	4822 051 30102	1k 5% 0,062W
3430	4822 051 30102	1k 5% 0,062W
3431	4822 051 30102	1k 5% 0,062W
3432	4822 051 30102	1k 5% 0,062W
3433	4822 051 30102	1k 5% 0,062W
3434	4822 051 30102	1k 5% 0,062W
3435	4822 051 30102	1k 5% 0,062W
3436	4822 051 30102	1k 5% 0,062W
3437	4822 051 30102	1k 5% 0,062W
3441	4822 051 30102	1k 5% 0,062W
3442	4822 051 30102	1k 5% 0,062W
3443	4822 051 30102	1k 5% 0,062W
3444	4822 051 30102	1k 5% 0,062W
3445	4822 051 30102	1k 5% 0,062W
3446	4822 051 30102	1k 5% 0,062W
3447	4822 051 30102	1k 5% 0,062W
3448	4822 051 30102	1k 5% 0,062W
3449	4822 051 30102	1k 5% 0,062W
3450	4822 051 30471	470R 5% 0,062W
3451	4822 051 30102	1k 5% 0,062W
3452	4822 051 30102	1k 5% 0,062W
3453	4822 051 30102	1k 5% 0,062W
3454	4822 051 30102	1k 5% 0,062W
3455	4822 051 30102	1k 5% 0,062W
3456	4822 051 30102	1k 5% 0,062W
3457	4822 051 30102	1k 5% 0,062W
3458	4822 051 30102	1k 5% 0,062W
3459	4822 051 30102	1k 5% 0,062W
3460	4822 051 30102	1k 5% 0,062W
3461	4822 051 30102	1k 5% 0,062W
3462	4822 051 30102	1k 5% 0,062W
3463	4822 051 30102	1k 5% 0,062W
3464	4822 051 30102	1k 5% 0,062W
3465	4822 051 30102	1k 5% 0,062W
3466	4822 051 30102	1k 5% 0,062W
3467	4822 051 30102	1k 5% 0,062W
3468	4822 051 30102	1k 5% 0,062W
3469	4822 051 30102	1k 5% 0,062W
3470	4822 051 30102	1k 5% 0,062W
3471	4822 051 30102	1k 5% 0,062W
3472	4822 051 30102	1k 5% 0,062W
3473	4822 051 30102	1k 5% 0,062W
3474	4822 051 30102	1k 5% 0,062W
3475	4822 051 30102	1k 5% 0,062W
3476	4822 051 30102	1k 5% 0,062W
3477	4822 051 30102	1k 5% 0,062W
3479	4822 051 30102	1k 5% 0,062W
3480	4822 051 30102	1k 5% 0,062W
3481	4822 117 12971	15R 5% 0,62W
3482	4822 117 12925	47k 1% 0,063W
3483	4822 051 30151	150R 5% 0,062W
3484	4822 117 12925	47k 1% 0,063W
3488	4822 051 30272	2k7 5% 0,062W
3489	4822 051 30272	2k7 5% 0,062W
3490	4822 051 30471	470R 5% 0,062W
3491	4822 051 30471	470R 5% 0,062W
3492	4822 051 30471	470R 5% 0,062W
3493	4822 051 30471	470R 5% 0,062W
3494	4822 051 30471	470R 5% 0,062W
3495	4822 051 30471	470R 5% 0,062W
3496	4822 051 30471	470R 5% 0,062W
3500	4822 117 12902	8k2 1% 0,063W
3501	4822 051 30102	1k 5% 0,062W
3502	4822 051 30471	470R 5% 0,062W
3503	4822 117 12902	8k2 1% 0,063W
3504	4822 051 30102	1k 5% 0,062W
3505	4822 051 30471	470R 5% 0,062W
3506	4822 117 12902	8k2 1% 0,063W
3507	4822 051 30102	1k 5% 0,062W
3508	4822 051 30471	470R 5% 0,062W
3509	4822 117 12902	8k2 1% 0,063W
3510	4822 051 30102	1k 5% 0,062W
3511	4822 051 30471	470R 5% 0,062W
3519	4822 051 30103	10k 5% 0,062W
3520	4822 051 30103	10k 5% 0,062W
3526	4822 117 11817	1k2 1% 1/16W
3527	4822 117 11817	1k2 1% 1/16W
3528	4822 051 30103	10k 5% 0,062W
3529	4822 051 30272	2k7 5% 0,062W
3530	4822 051 30181	180R 5% 0,062W
3531	4822 051 30103	10k 5% 0,062W
3532	4822 051 30103	10k 5% 0,062W
3533	4822 051 30102	1k 5% 0,062W
3534	4822 051 30102	1k 5% 0,062W
3540	4822 117 13632	100k 1% 0,62W
3541	4822 117 13632	100k 1% 0,62W
3542	4822 117 13632	100k 1% 0,62W
3543	4822 117 13632	100k 1% 0,62W
3544	4822 051 30471	470R 5% 0,062W
3545	4822 051 30471	470R 5% 0,062W
3546	4822 051 30471	470R 5% 0,062W
3547	4822 051 30471	470R 5% 0,062W
3548	4822 051 30103	10k 5% 0,062W
3549	4822 051 30222	2k2 5% 0,062W
3550	4822 051 30472	4k7 5% 0,062W
3551	4822 051 30102	1k 5% 0,062W
3552	4822 051 30391	390R 5% 0,062W
3552	4822 051 30101	100R 5% 0,062W/MZ-1200/22
3553	4822 051 30333	33k 5% 0,062W
3554	4822 051 30121	120R 5% 0,062W
3554	4822 117 12139	22R 5% 0,062W /MZ-1200/22
3555	4822 117 12139	22R 5% 0,062W /MZ-1200/22
3563	4822 051 30103	10k 5% 0,062W
3567	4822 051 30102	1k 5% 0,062W
3576	4822 051 30103	10k 5% 0,062W
3577	4822 051 30103	10k 5% 0,062W
3578	4822 051 30103	10k 5% 0,062W
3579	4822 051 30103	10k 5% 0,062W
3580	4822 051 30102	1k 5% 0,062W
3581	4822 051 30102	1k 5% 0,062W
3582	4822 051 30102	1k 5% 0,062W
3583	4822 051 30223	22k 5% 0,062W
3584	4822 051 30101	100R 5% 0,062W
3585	4822 051 30102	1k 5% 0,062W
3587	4822 051 30101	100R 5% 0,062W
3588	4822 117 12925	47k 1% 0,063W
3589	4822 051 30102	1k 5% 0,062W
3590	4822 117 13632	100k 1% 0,62W
3591	4822 117 13632	100k 1% 0,62W
3592	4822 117 12925	47k 1% 0,063W
3601	4822 051 30221	220R 5% 0,062W
3602	4822 051 30221	220R 5% 0,062W
3603	4822 051 30123	12k 5% 0,062W
3604	4822 051 30123	12k 5% 0,062W
3605	4822 051 30102	1k 5% 0,062W
3606	4822 051 30102	1k 5% 0,062W
3607	4822 051 30682	6k8 5% 0,062W
3608	4822 051 30682	6k8 5% 0,062W
3609	4822 051 30273	27k 5% 0,062W
3610	4822 051 30273	27k 5% 0,062W
3613	4822 051 30102	1k 5% 0,062W
3614	4822 051 30472	4k7 5% 0,062W
3615	4822 051 30103	10k 5% 0,062W
3616	4822 051 30103	10k 5% 0,062W
3617	4822 051 30562	5k6 5% 0,063W
3620	4822 051 30479	47R 5% 0,062W
3621	4822 051 30339	33R 5% 0,062W
3622	4822 051 30479	47R 5% 0,062W
3623	4822 051 30339	33R 5% 0,062W
3624	4822 051 30102	1k 5% 0,062W
3625	4822 051 30102	1k 5% 0,062W
3626	4822 051 30102	1k 5% 0,062W
3627	4822 052 10109 ⚠	10R 5% 0,33W
3628	4822 051 30472	4k7 5% 0,062W
3629	4822 051 30103	10k 5% 0,062W
3630	4822 051 30103	10k 5% 0,062W
3631	4822 051 30102	1k 5% 0,062W
3632	4822 051 30102	1k 5% 0,062W
3633	4822 051 30102	1k 5% 0,062W
3634	4822 051 30102	1k 5% 0,062W
3635	4822 051 30102	1k 5% 0,062W
3636	4822 051 30102	1k 5% 0,062W
3638	4822 051 30472	4k7 5% 0,062W
3640	4822 051 30562	5k6 5% 0,063W
3641	4822 051 30102	1k 5% 0,062W
3652	4822 051 30472	4k7 5% 0,062W
3653	4822 051 30472	4k7 5% 0,062W
4500	4822 051 30008	0R Jumper 0603
4600	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5160	2422 549 44607	INDFXD SM EMI 100MHz 600R
5161	2422 549 44607	INDFXD SM EMI 100MHz 600R
5400	4822 157 10586	Coil 2,2uH 10%
5401	4822 157 10586	Coil 2,2uH 10%
5402	5322 242 73686	RES CER 12MHz
5403	2422 543 01069	RES XTL 32,768kHz
5406	4822 157 10586	Coil 2,2uH 10%
5408	4822 157 10586	Coil 2,2uH 10%
5410	4822 157 62552	Coil 2,2uH 5%
5600	4822 157 62552	Coil 2,2uH 5%
5601	4822 157 62552	Coil 2,2uH 5%
5602	4822 157 62552	Coil 2,2uH 5%
5603	4822 157 62552	Coil 2,2uH 5%

DIODES

6001	4822 130 83757	MCL4148
6002	4822 130 30862	BZX79-C9V1
6207	4822 130 31878	1N4003G
6208	4822 130 31878	1N4003G
6406	4822 130 83757	MCL4148
6410	4822 130 80622	BAT54
6411	4822 130 31878	1N4003G
6413	4822 130 31878	1N4003G
6414	4822 130 31878	1N4003G
6415	4822 130 83757	MCL4148
6417	4822 130 83757	MCL4148
6601	4822 130 83757	MCL4148

TRANSISTORS & INTEGRATED CIRCUITS

7002	5322 130 60159	BC847B
7100	9322 150 74668	IC SM TDA7468D
7170	4822 130 60373	BC857B
7171	5322 130 60159	BC847B
7176	4822 130 42804	BC817-25
7177	4822 130 42804	BC817-25
7201	4822 130 40959	BC547B
7400	3139 110 53321	TMP88CS74YF - ' MZ1X00S53321 '
7402	9322 145 26668	M24C02-WMN6
7406	5322 130 60159	BC847B
7407	5322 130 60159	BC847B
7408	4822 130 41246	BC327-25

ELECTRICAL PARTS LIST - COMBI BOARD

TRANSISTORS & INTEGRATED CIRCUITS

7409	5322 130 60159	BC847B
7410	5322 130 60159	BC847B
7411	4822 130 60373	BC857B
7412	5322 130 60159	BC847B
7413	4822 130 60373	BC857B
7414	5322 130 60159	BC847B
7420	4822 130 60373	BC857B
7421	4822 130 60373	BC857B
7422	4822 130 60373	BC857B
7423	4822 130 60373	BC857B
7425	5322 130 60159	BC847B
7426	5322 130 60159	BC847B
7601	4822 209 31378	NJM4556AM
7603	4822 130 42804	BC817-25
7604	4822 130 42804	BC817-25
7622	4822 130 60373	BC857B
7623	5322 130 60159	BC847B
7624	5322 130 60159	BC847B
7635	4822 130 60373	BC857B
7636	5322 130 60159	BC847B
7651	4822 130 42804	BC817-25
7652	4822 130 42804	BC817-25
7653	4822 130 42804	BC817-25
7654	4822 130 42804	BC817-25

Note : Only the parts mentioned in this list are normal service spare parts.

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ELECTRICAL PARTS LIST - COMBI BOARD

TRANSISTORS & INTEGRATED CIRCUITS

7409	5322 130 60159	BC847B
7410	5322 130 60159	BC847B
7411	4822 130 60373	BC857B
7412	5322 130 60159	BC847B
7413	4822 130 60373	BC857B
7414	5322 130 60159	BC847B
7420	4822 130 60373	BC857B
7421	4822 130 60373	BC857B
7422	4822 130 60373	BC857B
7423	4822 130 60373	BC857B
7425	5322 130 60159	BC847B
7426	5322 130 60159	BC847B
7601	4822 209 31378	NJM4556AM
7603	4822 130 42804	BC817-25
7604	4822 130 42804	BC817-25
7622	4822 130 60373	BC857B
7623	5322 130 60159	BC847B
7624	5322 130 60159	BC847B
7635	4822 130 60373	BC857B
7636	5322 130 60159	BC847B
7651	4822 130 42804	BC817-25
7652	4822 130 42804	BC817-25
7653	4822 130 42804	BC817-25
7654	4822 130 42804	BC817-25

Note : Only the parts mentioned in this list are normal service spare parts.

MODULE POWER BOX

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Brief introduction of the Module Power Box

1. Module Power Box consists of the 2 Channel Class D Amplifier and the Switching Mode Power Supply (SMPS) design for use with lifestyle micro centre unit (MZ-1000, MZ-1100 and MZ-1200).

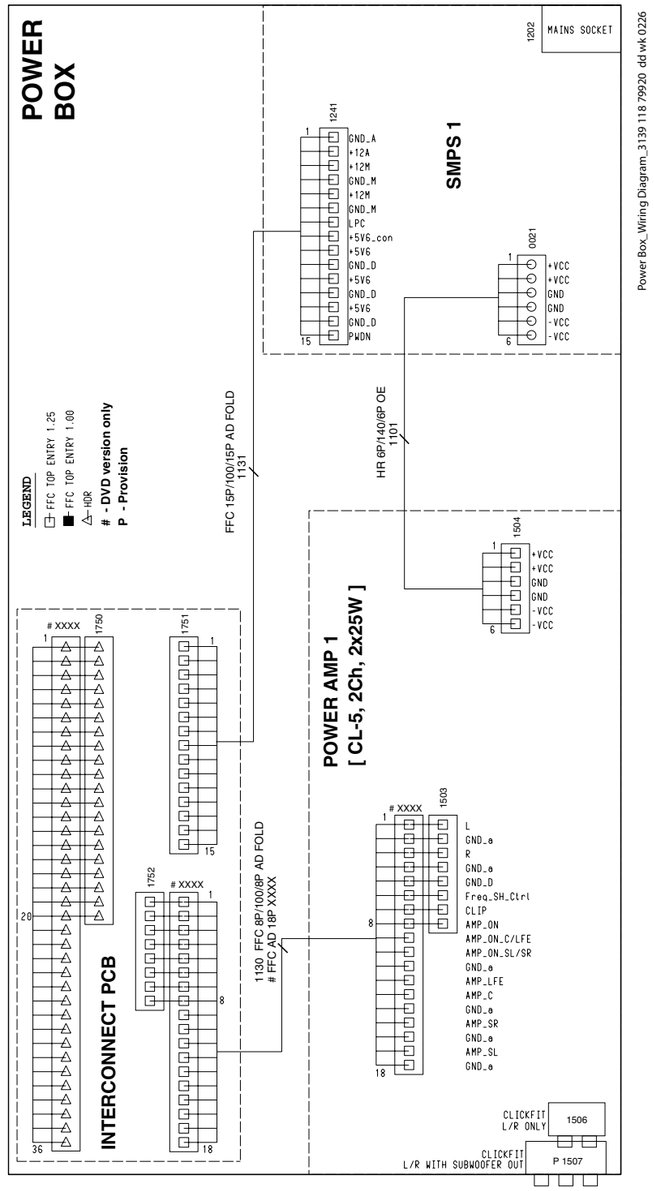
2. A specific cable (CABLE INTERCONNECT 20P) is needed for connection between the Power Box and the centre unit in order for the centre unit to receive supply for operation and also to implement software control to the Power Box.

3. WARNING

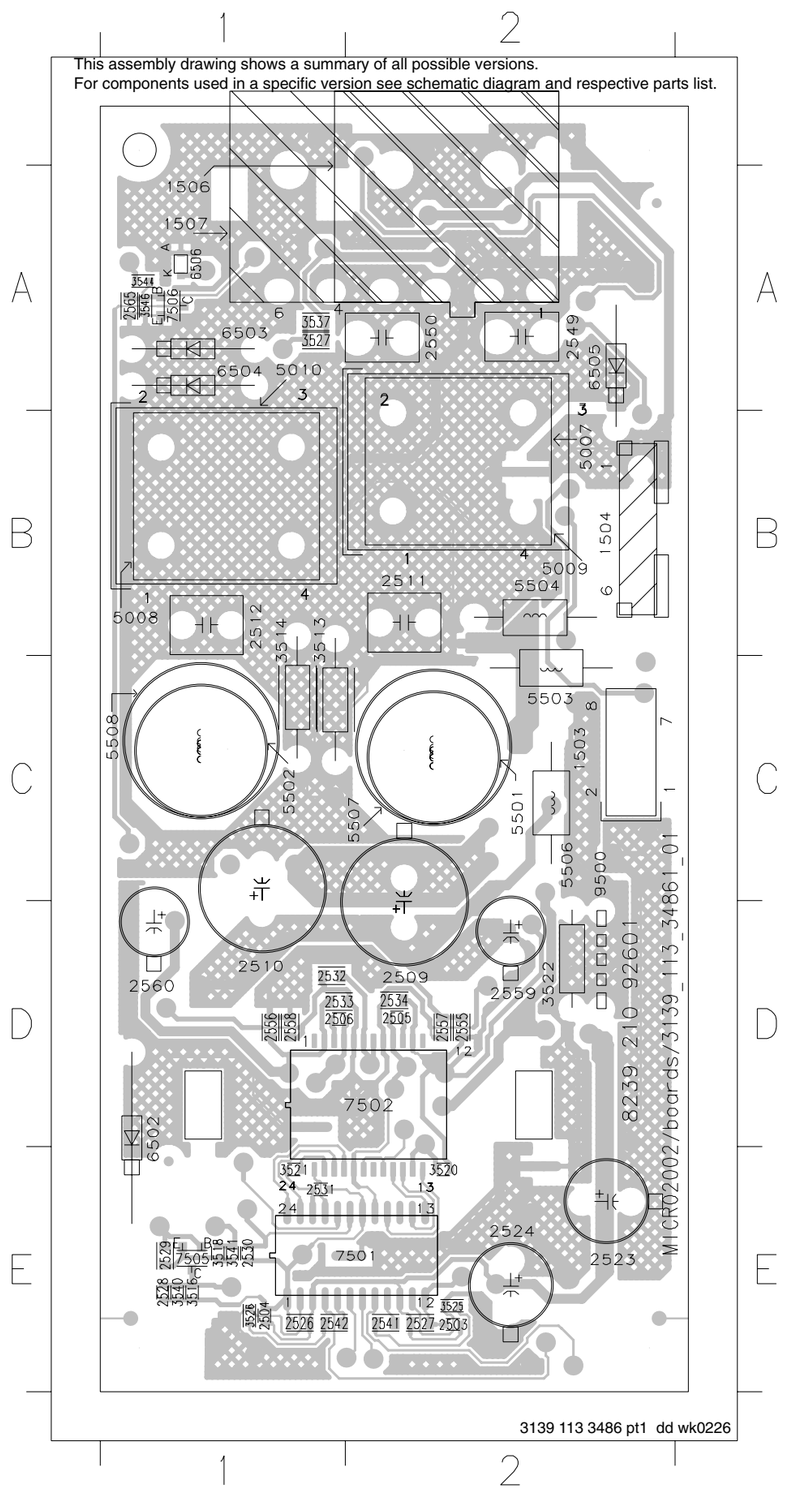
SMPS Board consists of high voltage filter capacitors (2203 or 2210).
Safety measures must be taken by the repair technician during servicing:

- When the supply is on, avoid touching the SMPS Board and the high voltage filter capacitors (2203 or 2210).
- When the supply is off, make sure to discharge the high voltage filter capacitors (2203 or 2210) with a suitable value resistor before any servicing to prevent electric shock.

WIRING DIAGRAM

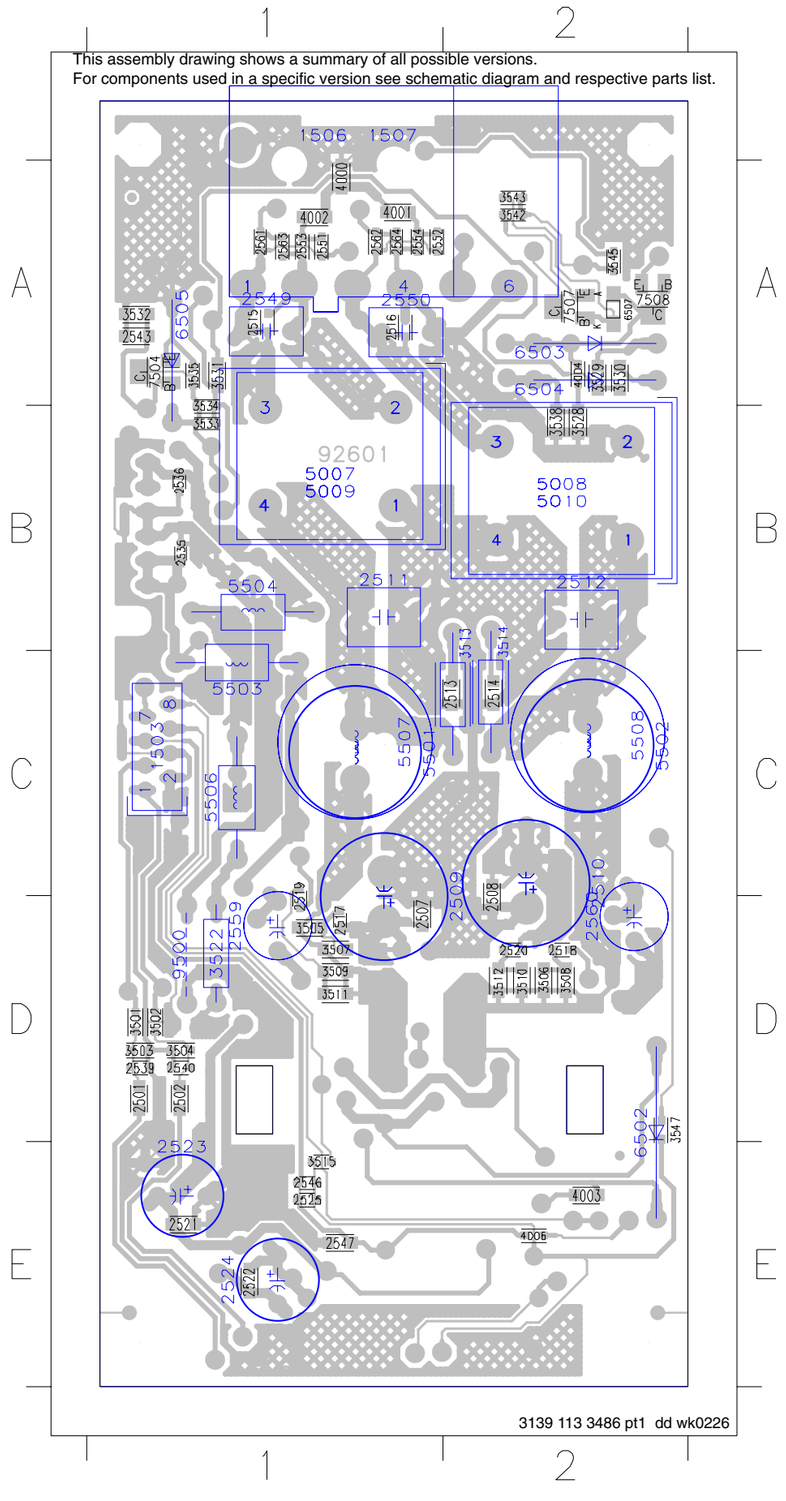


CLASS D AMPLIFIER BOARD - TOP VIEW LAYOUT



1503	C2
1504	B2
1506	A1
1507	A1
2503	E2
2504	E1
2505	D2
2506	D1
2509	D2
2510	D1
2511	B2
2512	B1
2523	E2
2524	E2
2526	E1
2527	E2
2528	E1
2529	E1
2530	E1
2531	E1
2532	D1
2533	D1
2534	D2
2541	E2
2542	E1
2549	A2
2550	A2
2555	D2
2556	D1
2557	D2
2558	D1
2559	D2
2560	D1
2565	A1
3513	B1
3514	B1
3516	E1
3518	E1
3520	E2
3521	E1
3522	D2
3525	E2
3526	E1
3527	A1
3537	A1
3540	E1
3541	E1
3544	A1
3546	A1
5007	B2
5008	B1
5009	B2
5010	A1
5501	C2
5502	C1
5503	C2
5504	B2
5506	C2
5507	C2
5508	C1
6502	D1
6503	A1
6504	A1
6505	A2
6506	A1
7501	E2
7502	D2
7505	E1
7506	A1
9500	C2

CLASS D AMPLIFIER BOARD - BOTTOM VIEW LAYOUT



2501	D1	1503	C1
2502	D1	1506	A1
2507	D1	1507	A1
2508	D2	2509	D2
2513	C2	2510	C2
2514	C2	2511	B1
2515	A1	2512	B2
2516	A1	2523	E1
2517	D1	2524	E1
2518	D2	2549	A1
2519	C1	2550	A1
2520	D2	2559	D1
2521	E1	2560	D2
2522	E1	3513	C2
2525	E1	3514	C2
2535	B1	3522	D1
2536	B1	5007	B1
2539	D1	5008	B2
2540	D1	5009	B1
2543	A1	5010	B2
2546	E1	5501	C1
2547	E1	5502	C2
2551	A1	5503	C1
2552	A1	5504	B1
2553	A1	5506	C1
2554	A1	5507	C1
2561	A1	5508	C2
2562	A1	6502	D2
2563	A1	6503	A2
2564	A1	6504	A2
3501	D1	6505	A1
3502	D1	9500	D1
3503	D1		
3504	D1		
3505	D1		
3506	D2		
3507	D1		
3508	D2		
3509	D1		
3510	D2		
3511	D1		
3512	D2		
3515	E1		
3528	B2		
3529	A2		
3530	A2		
3531	A1		
3532	A1		
3533	B1		
3534	B1		
3535	A1		
3538	B2		
3542	A2		
3543	A2		
3545	A2		
3547	D2		
4000	A1		
4001	A1		
4002	A1		
4003	E2		
4004	A2		
4006	E2		
6507	A2		
7504	A1		
7507	A2		
7508	A2		

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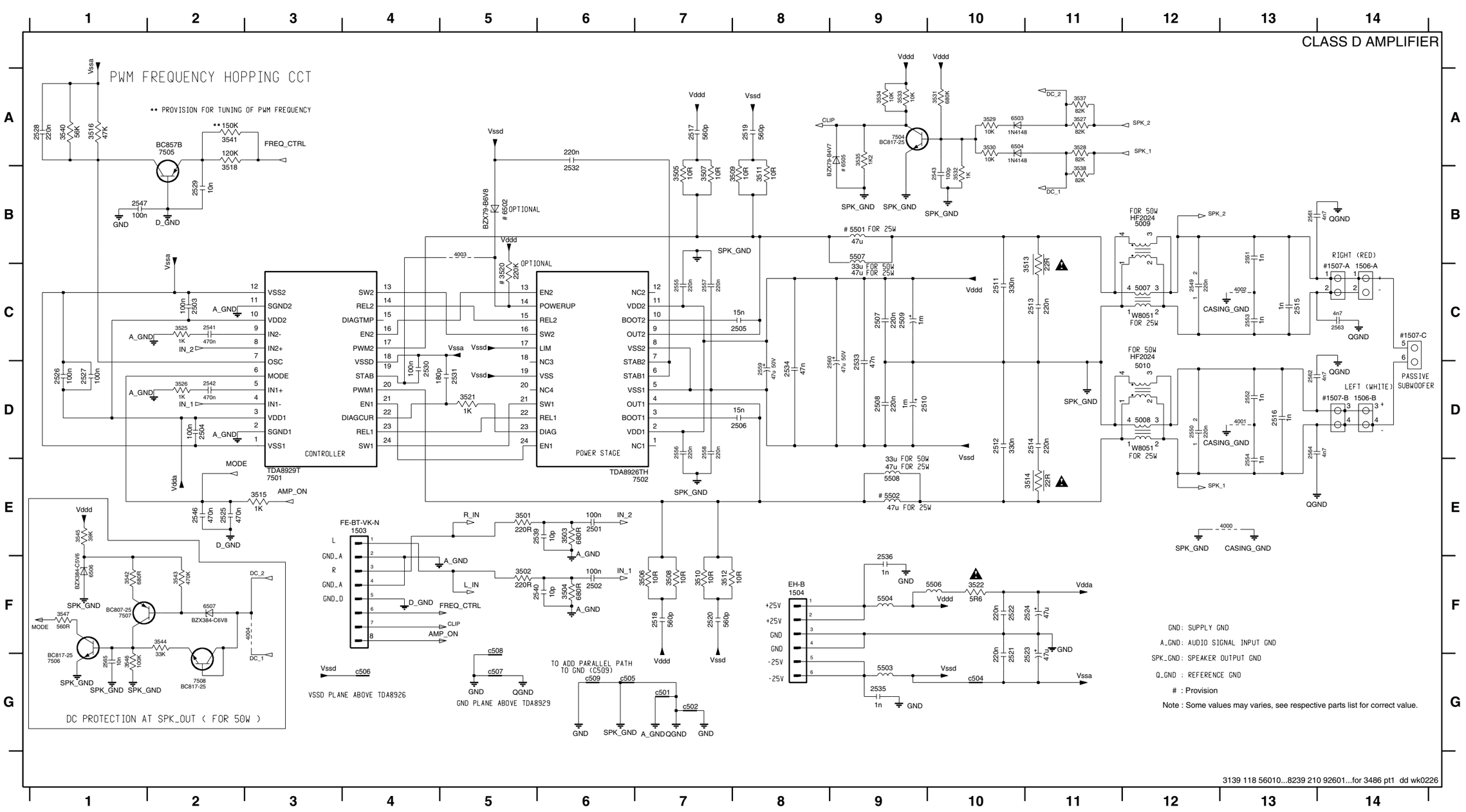
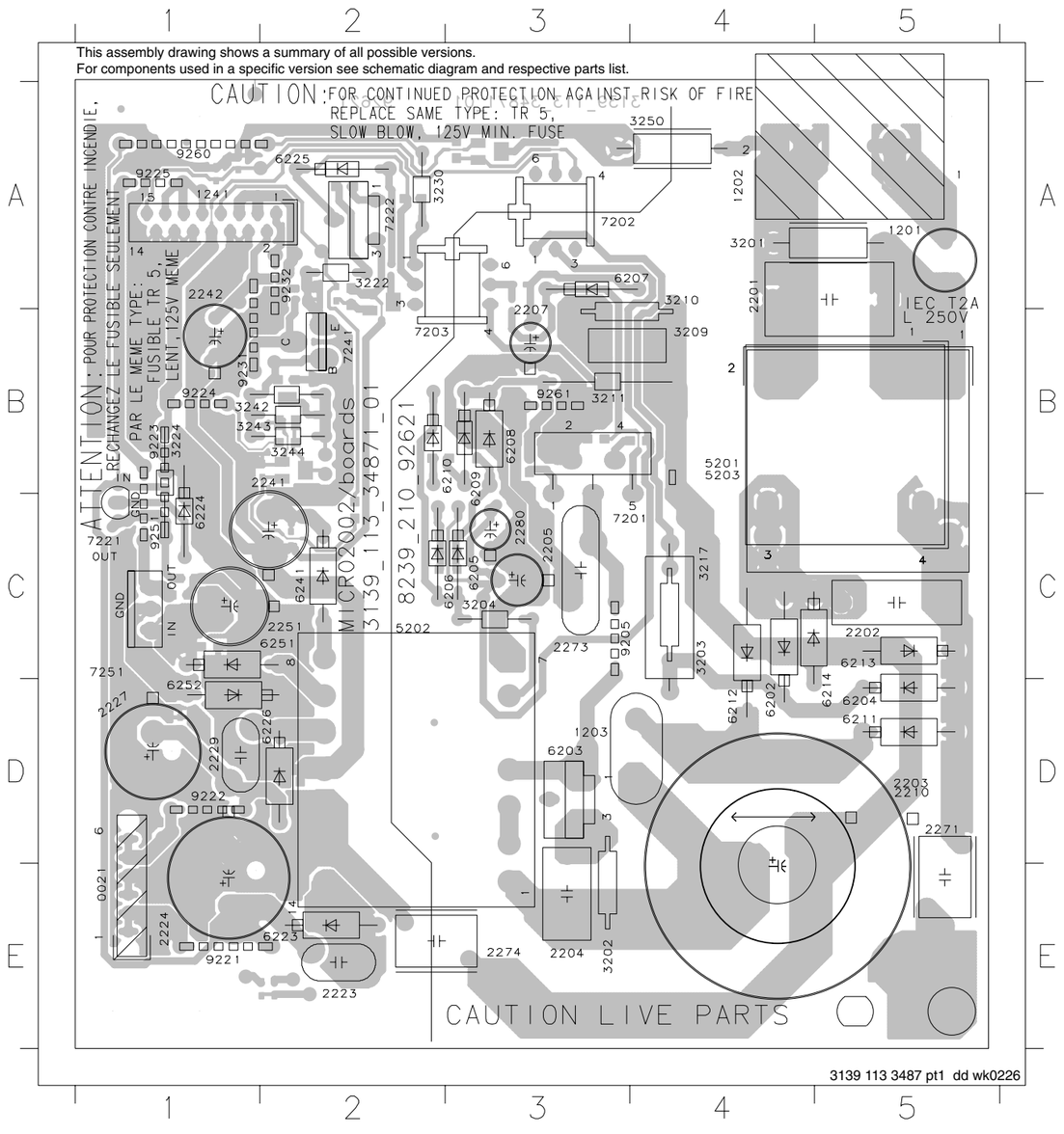
CLASS D AMPLIFIER BOARD - CIRCUIT DIAGRAM

1503 E4	1507-C C14	2506 D8	2512 D10	2518 F7	2524 F11	2530 D4	2536 F9	2546 E2	2553 C13	2559 D8	2565 G1	3506 F7	3512 F7	3520 C5	3528 A11	3534 A9	3542 F1	4000 E13	5008 D12	5504 F9	6504 A10	7504 A9	c502 G7	c509 G6
1504 F8	2501 E6	2507 C9	2513 C11	2519 A8	2525 E2	2531 D5	2539 E6	2547 B1	2554 E13	2560 D9	3501 E5	3507 B7	3513 C11	3521 D5	3529 A10	3535 A9	3543 F2	4001 D13	5009 B12	5506 F10	6505 A9	7505 A2	c504 G10	
1506-A C14	2502 F6	2508 D9	2514 D11	2520 F7	2526 D1	2532 A6	2540 F6	2549 C12	2555 C7	2561 B13	3502 F5	3508 F7	3514 E11	3522 F10	3530 A10	3537 A11	3544 F2	4002 C13	5010 D12	5507 B9	6506 F1	7506 G1	c505 G6	
1506-B D14	2503 C2	2509 C9	2515 C13	2521 G10	2527 D1	2533 D9	2541 C2	2550 D12	2556 D7	2562 D13	3503 E6	3509 B7	3515 E3	3525 C2	3531 A10	3538 B11	3545 E1	4003 B5	5501 B9	5508 E9	6507 F2	7507 F1	c506 G4	
1507-A C14	2504 D2	2510 D9	2516 D13	2522 F10	2528 A1	2534 D8	2542 D2	2551 B13	2557 C7	2563 C14	3504 F6	3510 F7	3516 A1	3526 D2	3532 B10	3539 A9	3546 G1	4004 F3	5502 E9	6502 B5	7501 E3	7508 G2	c507 G5	
1507-B D14	2505 C8	2511 C10	2517 A7	2523 G11	2529 B2	2535 G9	2543 B10	2552 D13	2558 D7	2564 D13	3505 B7	3511 B8	3518 A2	3527 A11	3533 A9	3541 A2	3547 F1	5007 C12	5503 G9	6503 A10	7502 E7	c501 G7	c508 F5	



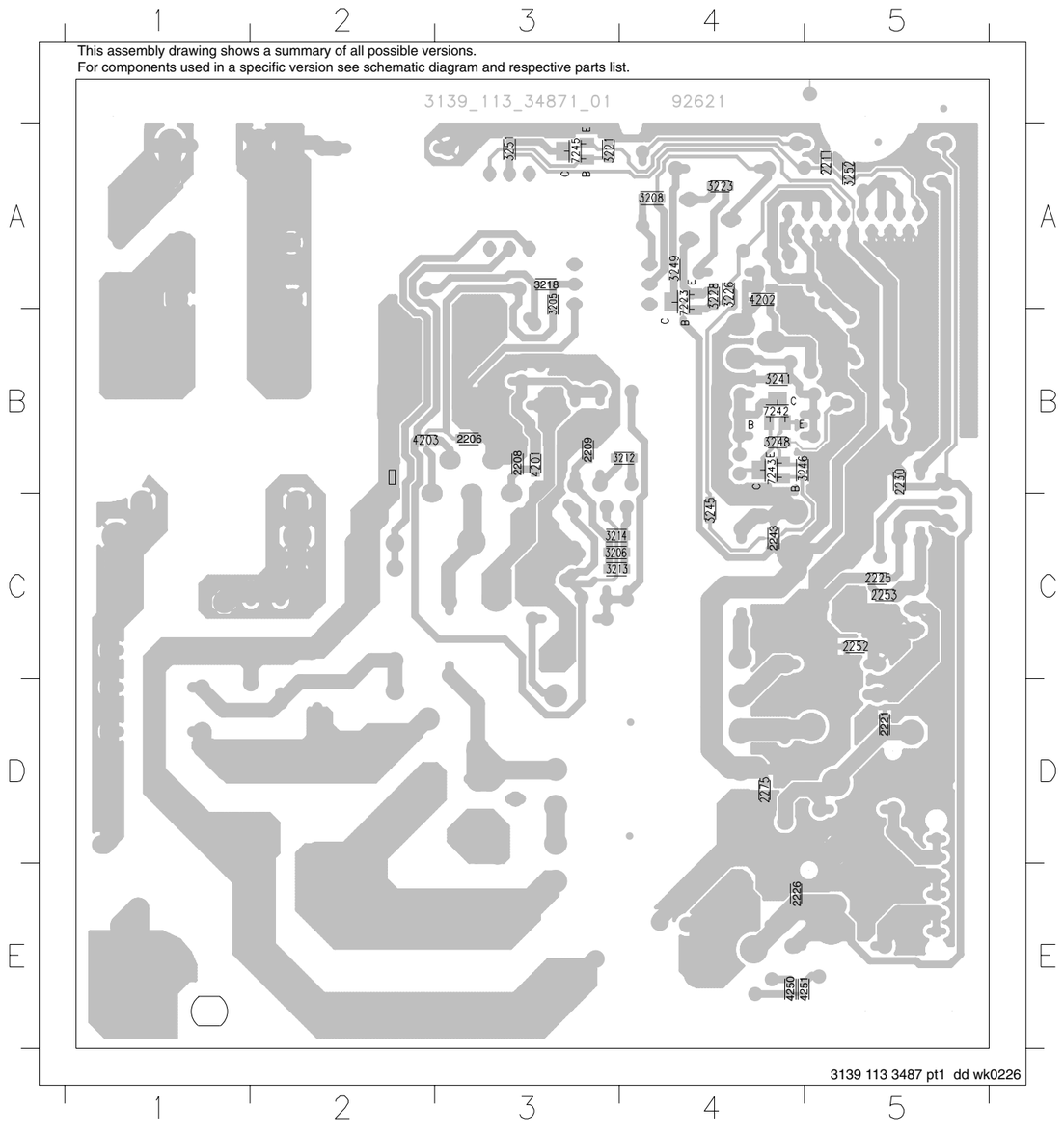
SUPPLY BOARD - COMPONENT LAYOUT

0021 E1	2207 B3	2273 C3	3217 C4	5203 B4	6211 D5	6252 D1	9222 D1
1201 A5	2210 D5	2274 E3	3222 A2	6202 D4	6212 D4	7201 C3	9223 B1
1202 A4	2223 E2	2280 C3	3224 B1	6203 D3	6213 C5	7202 A3	9224 B1
1203 D3	2224 E1	3201 A4	3230 A2	6204 D5	6214 D5	7203 B2	9225 A1
1241 A1	2227 D1	3202 E3	3242 B1	6205 C3	6223 E2	7221 C1	9231 B1
2201 A4	2229 D1	3203 C4	3243 B1	6206 C3	6224 C1	7222 A2	9232 A2
2202 C5	2241 B2	3204 C3	3244 B2	6207 A4	6225 A2	7241 B2	9251 C1
2203 D5	2242 A1	3209 B4	3250 A4	6208 B3	6226 D2	7251 C1	9260 A1
2204 E3	2251 C2	3210 A4	5201 B4	6209 B3	6241 C2	9205 C3	9261 B3
2205 C3	2271 D5	3211 B3	5202 C2	6210 B3	6251 C2	9221 E1	


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE
REPLACE SAME TYPE: TR 5,
SLOW BLOW, 125V MIN. FUSE
ATTENTION: POUR PROTECTION CONTRE INCENDIE,
RECHANGEZ LE FUSIBLE SEULEMENT
PAR LE MEME TYPE:
FUSIBLE TR 5,
LENT, 125V MEME
8239_210_92621
MICRO2002/boards
3139_113_34871_01
IEC T2A
L 250V
CAUTION LIVE PARTS
3139 113 3487 pt1 dd wk0226

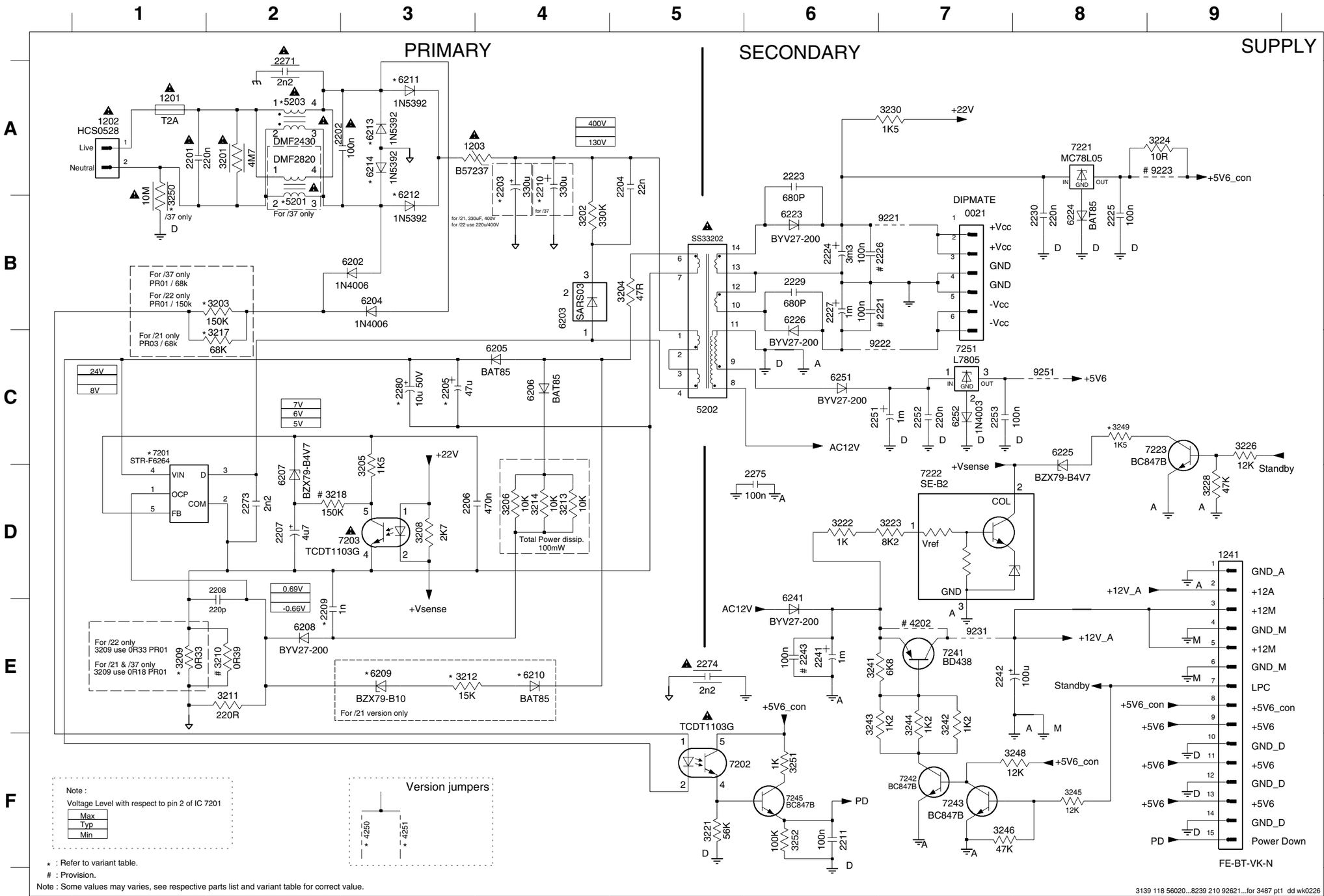
SUPPLY BOARD - CHIP LAYOUT

2206 B3	2225 C5	2253 C5	3212 B4	3223 A4	3246 B5	4201 B3	7223 B4
2208 B3	2226 E5	2275 D4	3213 C4	3226 B4	3248 B5	4202 A4	7242 B4
2209 B3	2230 C5	3205 A3	3214 C4	3228 B4	3249 A4	4203 B2	7243 C4
2211 A5	2243 C4	3206 C4	3218 A3	3241 B4	3251 A3	4250 E4	7245 A3
2221 D5	2252 C5	3208 A4	3221 A4	3245 C4	3252 A5	4251 E5	


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
3139_113_34871_01
92621
3139 113 3487 pt1 dd wk0226

9-5

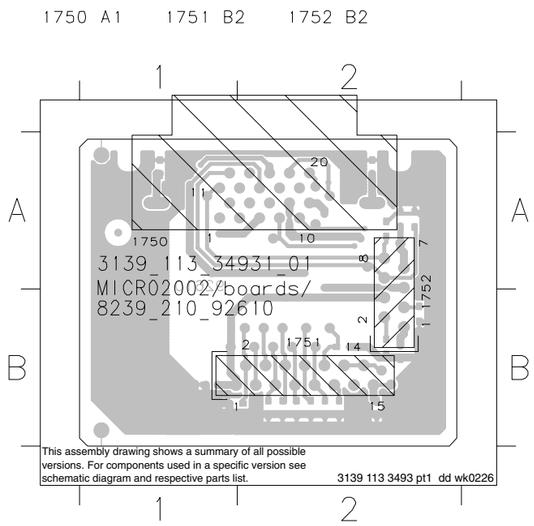
SUPPLY BOARD - CIRCUIT DIAGRAM



0021 B7
1201 A1
1202 A1
1203 A4
1241 D9
2201 A1
2202 A3
2203 A4
2204 A5
2205 C3
2206 D3
2207 D2
2208 D2
2209 E2
2210 A4
2211 F6
2221 B6
2223 A6
2224 B6
2225 B8
2226 B6
2227 B6
2229 B6
2230 B8
2241 E6
2242 E7
2243 E6
2251 C6
2252 C7
2253 C7
2271 A2
2273 D2
2274 E5
2275 D6
2280 C3
3201 A2
3202 B4
3203 B2
3204 B5
3205 D3
3206 D4
3208 D3
3209 E1
3210 E2
3211 E2
3212 E3
3213 D4
3214 D4
3217 C2
3218 D2
3221 F5
3222 D6
3223 D7
3224 A9
3226 C9
3228 D9
3230 A7
3241 E6
3242 E7
3243 E6
3244 E7
3245 F8
3246 F7
3248 F8
3249 C8
3250 A1
3251 F6
3252 F6
4202 E7
4250 F3
4251 F3
5201 B2
5202 C5
5203 A2
6202 B3
6203 B4
6204 B3
6205 C4
6206 C4
6207 D2
6208 E2
6209 E3
6210 E4
6211 A3
6212 B3
6213 A3
6214 A3
6223 B6
6224 B8
6225 C8
6226 B6
6241 E6
6251 C6
6252 C7
7201 C1
7202 F5
7203 D3
7221 A8
7222 D7
7223 C9
7241 E7
7242 F7
7243 F7
7245 F6
7251 C7
9221 B7
9222 C7
9223 A9
9231 E7
9251 C8

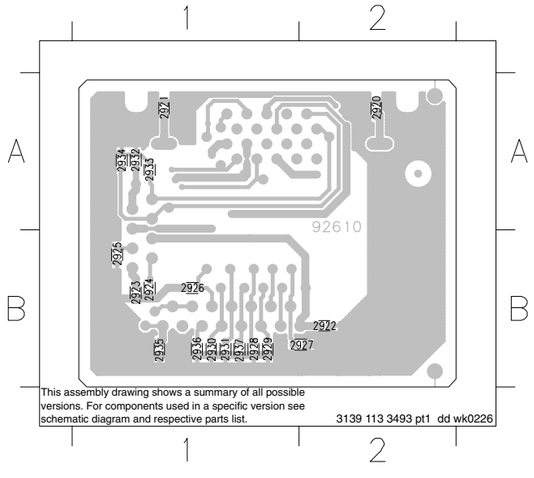
9-6

INTERCONNECT BOARD - COMPONENT LAYOUT


1750 A1
1751 B2
1752 B2
3139_113_34931_01
MICR02002/boards/
8239_210_92610
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139 113 3493 pt1 dd wk0226

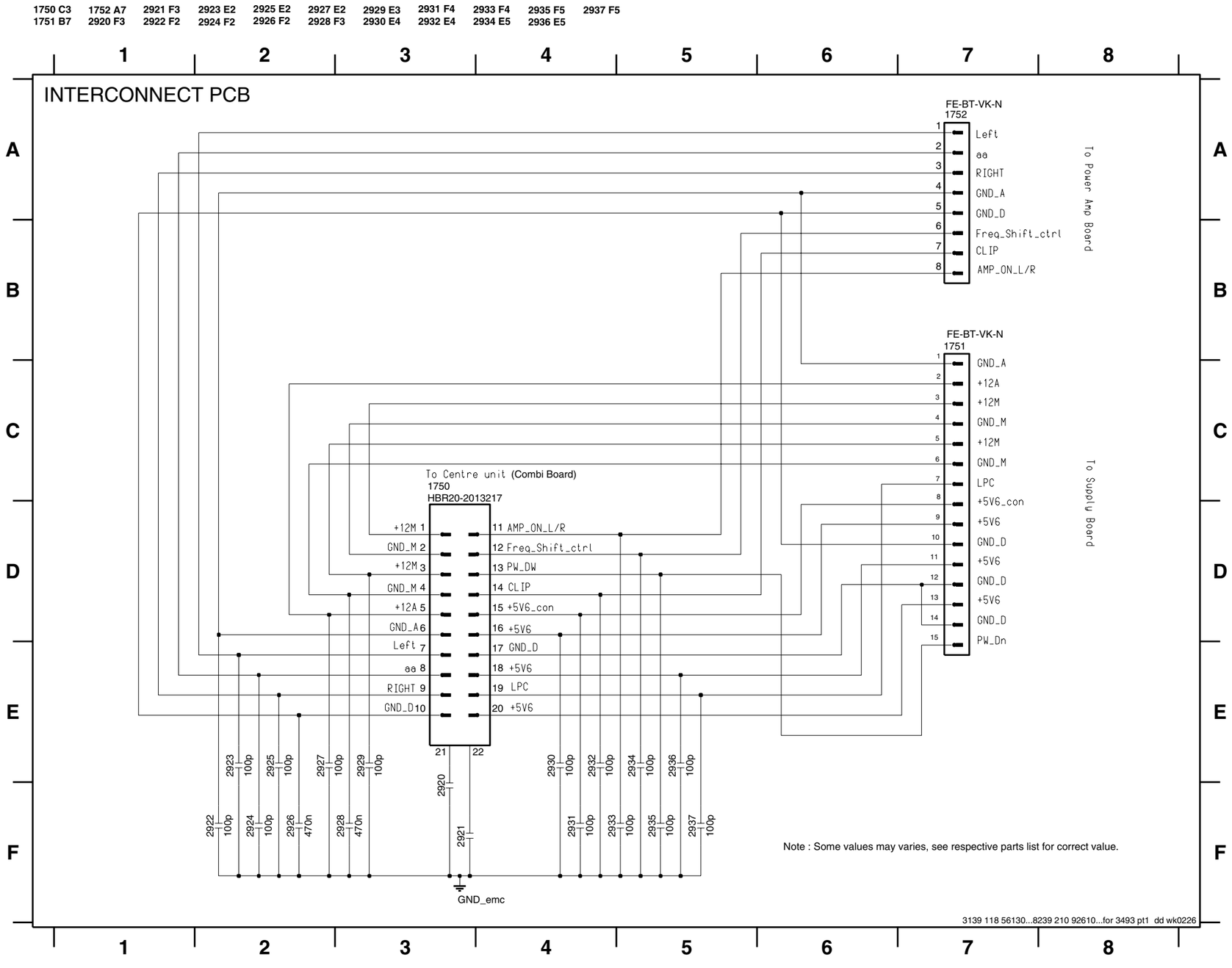
INTERCONNECT BOARD - CHIP LAYOUT

2920 A2
2921 A1
2922 B2
2923 B1
2924 B1
2925 B1
2926 B1
2927 B2
2928 B1
2929 B1
2930 B1
2931 B1
2932 A1
2933 A1
2934 A1
2935 B1
2936 B1
2937 B1

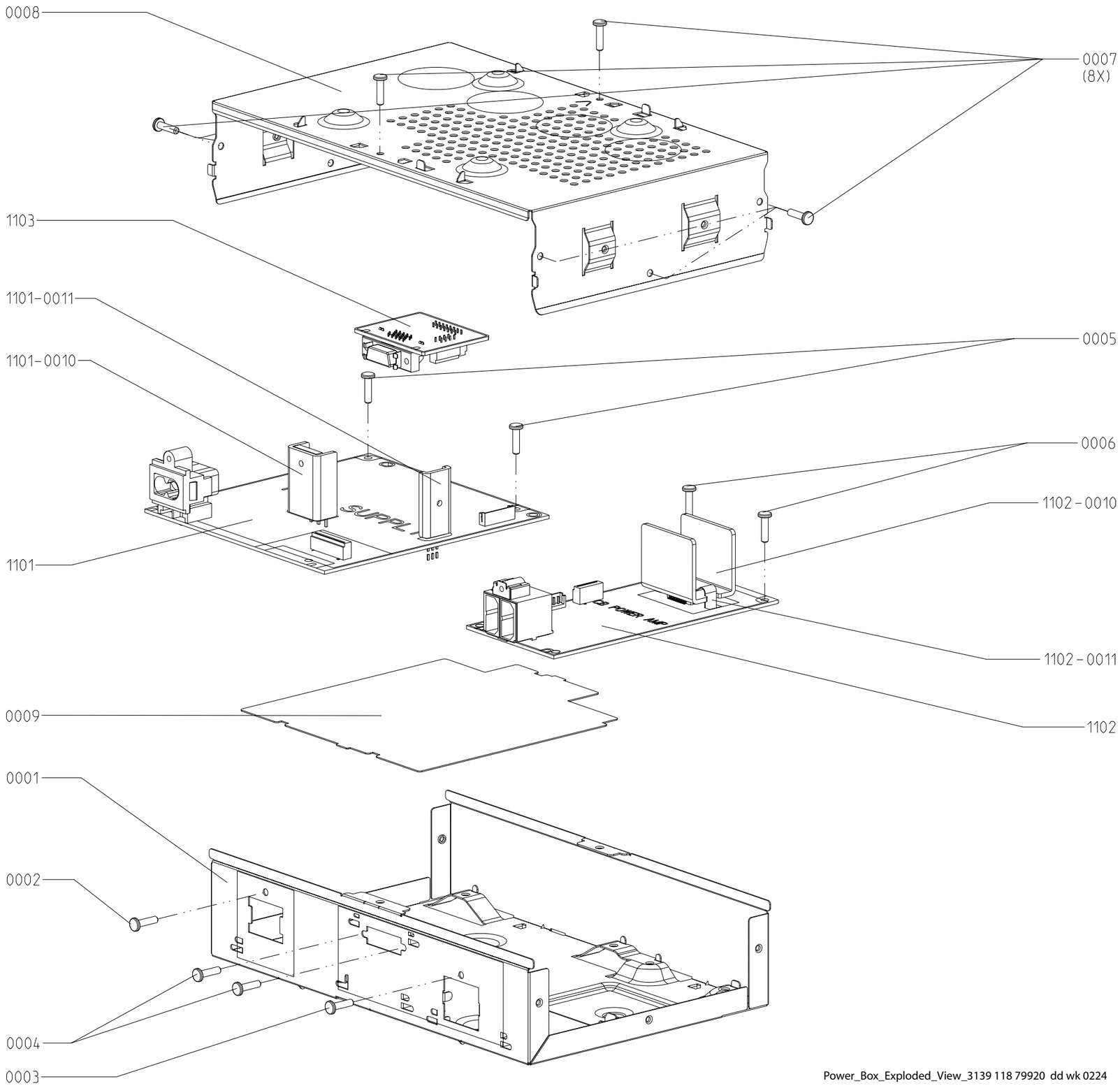

92610
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139 113 3493 pt1 dd wk0226

INTERCONNECT BOARD - CIRCUIT DIAGRAM

1750 C3 1751 B7 1752 A7 2920 F3 2921 F3 2922 F2 2923 E2 2924 F2 2925 E2 2926 F2 2927 E2 2928 F3 2929 E3 2930 E4 2931 F4 2932 E4 2933 F4 2934 E5 2935 F5 2936 E5 2937 F5



POWER BOX MECHANICAL EXPLODED VIEW



Power_Box_Exploded_View_3139 118 79920 dd wk 0224

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MECHANICAL & ACCESSORIES PARTS LIST

1102-0011	4835 256 97316	Clip Heatsink POWER AMP
1130	3139 111 01630	FFC Foil 8P/100/8P AD Fold
1131	3139 111 01640	FFC Foil 15P/100/15P AD Fold

Note : Only the parts mentioned in this list are normal service spare parts.

SCREW LISTS

0002	D3 x 10
0003	D3 x 10
0004	M2,6 x 12
0005	M3 x 10
0006	M3 x 10
0007	M3 x 6

Supply Board Variant Table

Item No.	MZ-1x00 (/21 version)	MZ-1x00 (/22 version)	MZ-1x00 (/37 version)
2203	330u	220u	-
2205	47u	22u	47u
2209	6n8	1n	1n
2210	-	-	330u
2280	-	10u	-
3203	-	150K	68K
3209	0R18	0R33	0R18
3210	-	-	-
3212	15K	-	-
3217	68K	-	-
3218	-	-	-
3249	2K2	1K5	2K2
3250	-	-	10M
4202	-	-	-
4250	-	x	x
4251	x	-	x
5201	DMF2820	-	DMF2405
5203	-	DMF2430	-
6209	BZX79-B10	-	-
6210	BAT85	-	-
6211	1N4006	1N4006	1N5392
6212	1N4006	1N4006	1N5392
6213	1N4006	1N4006	1N5392
6214	1N4006	1N4006	1N5392
7201	STR-F6267S	STR-F6264	STR-F6254
9223	-	-	-

x - item in use.

9-8

ELECTRICAL PARTS LIST - SUPPLY BOARD

MISCELLANEOUS

1201	9965 000 07788 ⚠	FUSE RAD LT 2A 250V
1202	4822 265 31015 ⚠	Mains Socket
1203	2122 612 00055 ⚠	NTC DC B57237 3W1 S 4R7
1241	4822 265 10981	Flex Connector 15P

CAPACITORS

2201	4822 121 10512 ⚠	220nF 20% 275V
2202	4822 121 10711 ⚠	100nF 20% 275V
2203	4822 124 12415	220uF 20% 400V
2204	5322 121 42211	22nF 5% 630V
2205	4822 124 40764	22uF 100 V
2206	3198 017 44740	470nF 10V
2207	4822 124 40769	4,7uF 20% 100V
2208	4822 126 13883	220pF 5% 50V
2209	3198 016 31020	1nF 25V
2211	2238 586 59812	100nF +80/-20% 50V
2223	4822 126 14138	680pF 10% 2kV
2224	4822 124 42367	3300uF 20% 35V
2225	2238 586 59812	100nF +80/-20% 50V
2227	4822 124 12056	1000uF 20% 35V
2229	4822 126 14138	680pF 10% 2kV
2230	4822 126 13879	220nF +80/-20% 16V
2241	4822 124 80061	1000uF 20% 25V
2242	4822 124 41643	100uF 20% 16V
2251	4822 124 81144	1000uF 16V
2252	4822 126 13879	220nF +80/-20% 16V
2253	2238 586 59812	100nF +80/-20% 50V
2273	4822 126 13451	2,2nF 10% 2kV
2274	2020 554 90173 ⚠	CERSAF KX 2,2nF 20% 250V
2275	2238 586 59812	100nF +80/-20% 50V
2280	4822 124 40248	10uF 20% 63V

RESISTORS

3201	4822 053 21475 ⚠	4M7 5% 0,5W
3202	4822 116 52272	330k 5% 0,5W
3203	2322 193 53154	RST MFLM PR01 S 150k PM5
3204	4822 116 52195	47R 5% 0,5W
3205	4822 051 30152	1k5 5% 0,062W
3206	4822 117 10833	10k 1% 0,1W
3208	4822 051 30272	2k7 5% 0,062W
3209	4822 117 11342	0R33 5% 2W
3211	4822 116 83872	220R 5% 0,5W
3213	4822 117 10833	10k 1% 0,1W
3214	4822 117 10833	10k 1% 0,1W
3221	4822 051 30563	56k 5% 0,062W
3222	4822 050 11002	1k 1% 0,4W
3223	4822 117 12902	8k2 1% 0,063W
3224	4822 116 52176	10R 5% 0,5W
3226	4822 051 30123	12k 5% 0,062W
3228	4822 117 12925	47k 1% 0,063W
3230	4822 116 52243	1k5 5% 0,5W
3241	4822 051 30682	6k8 5% 0,062W
3242	4822 116 52207	1k2 5% 0,5W
3243	4822 116 52207	1k2 5% 0,5W
3244	4822 116 52207	1k2 5% 0,5W
3245	4822 051 30123	12k 5% 0,062W
3246	4822 117 12925	47k 1% 0,063W
3248	4822 051 30123	12k 5% 0,062W
3249	4822 051 30152	1k5 5% 0,062W
3251	4822 051 30102	1k 5% 0,062W
3252	4822 117 13632	100k 1% 0,62W
4201	4822 051 30008	0R Jumper 0603
4203	4822 051 30008	0R Jumper 0603
4250	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5202	2422 531 02549 ⚠	TFM SMT LAYER SS33202-00
5203	2422 549 44725 ⚠	FIL MAINS 30MH DMF2430

DIODES

6202	4822 130 31603	1N4006
6203	9322 185 09682	DIO REC SARS03(LF4)
6204	4822 130 31603	1N4006
6205	4822 130 31983	BAT85
6206	4822 130 31983	BAT85
6207	4822 130 34174	BZX79-B4V7
6208	4822 130 10871	BYV27-200
6211	4822 130 31603	1N4006
6212	4822 130 31603	1N4006
6213	4822 130 31603	1N4006
6214	4822 130 31603	1N4006
6223	4822 130 10871	BYV27-200
6224	4822 130 31983	BAT85
6225	4822 130 34174	BZX79-B4V7
6226	4822 130 10871	BYV27-200
6241	4822 130 10871	BYV27-200
6251	4822 130 10871	BYV27-200
6252	4822 130 31878	1N4003G

TRANSISTORS & INTEGRATED CIRCUITS

7201	9322 185 84682	IC STR-F6264(LF1352)
7202	4822 209 16708 ⚠	TCDT1103G
7203	4822 209 16708 ⚠	TCDT1103G
7221	4822 209 72042	IC MC78L05ACP
7222	9322 185 04682	IC TF SE-B2
7223	5322 130 60159	BC847B
7241	4822 130 40995	BD438
7242	5322 130 60159	BC847B
7243	5322 130 60159	BC847B
7245	5322 130 60159	BC847B
7251	4822 209 31841	IC L7805CP

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - CLASS D AMPLIFIER BOARD

MISCELLANEOUS

1503	4822 265 11515	Flex Connector 8P
1506	2422 025 17848	Speaker Terminal 4P Red/White

CAPACITORS

2501	4822 126 14585	100nF 10% 50V
2502	4822 126 14585	100nF 10% 50V
2503	2238 586 59812	100nF +80/-20% 50V
2504	2238 586 59812	100nF +80/-20% 50V
2505	3198 017 31530	15nF 50V
2506	3198 017 31530	15nF 50V
2507	4822 126 13473	220nF +80/-20% 50V
2508	4822 126 13473	220nF +80/-20% 50V
2509	4822 124 12056	1000uF 20% 35V
2510	4822 124 12056	1000uF 20% 35V
2511	5322 121 42661	330nF 5% 63V
2512	5322 121 42661	330nF 5% 63V
2513	4822 126 14076	220nF +80/-20% 25V
2514	4822 126 14076	220nF +80/-20% 25V
2515	5322 126 11578	1nF 10% 50V
2516	5322 126 11578	1nF 10% 50V
2517	4822 126 14249	560pF 10% 50V
2518	4822 126 14249	560pF 10% 50V
2519	4822 126 14249	560pF 10% 50V
2520	4822 126 14249	560pF 10% 50V
2521	4822 126 13473	220nF +80/-20% 50V
2522	4822 126 13473	220nF +80/-20% 50V
2523	3198 028 44790	47uF 20% 35V
2524	3198 028 44790	47uF 20% 35V
2525	3198 017 44740	470nF 10V
2526	4822 126 14585	100nF 10% 50V
2527	4822 126 14585	100nF 10% 50V
2528	4822 126 13879	220nF +80/-20% 16V
2529	4822 122 33177	10nF 20% 50V
2530	2238 586 59812	100nF +80/-20% 50V
2531	4822 126 14508	180pF 5% 50V
2532	4822 126 13473	220nF +80/-20% 50V
2533	4822 126 13751	47nF 10% 63V
2534	4822 126 13751	47nF 10% 63V
2535	5322 126 11578	1nF 10% 50V
2536	5322 126 11578	1nF 10% 50V
2539	4822 122 33741	10pF 10% 50V
2540	4822 122 33741	10pF 10% 50V
2541	4822 126 13482	470nF +80/-20% 16V
2542	4822 126 13482	470nF +80/-20% 16V
2543	5322 122 32531	100pF 5% 50V
2546	3198 017 44740	470nF 10V
2547	4822 126 14585	100nF 10% 50V
2549	4822 121 42408	220nF 5% 63V
2550	4822 121 42408	220nF 5% 63V
2551	5322 126 11578	1nF 10% 50V
2552	5322 126 11578	1nF 10% 50V
2553	5322 126 11578	1nF 10% 50V
2554	5322 126 11578	1nF 10% 50V
2555	4822 126 14076	220nF +80/-20% 25V
2556	4822 126 14076	220nF +80/-20% 25V
2557	4822 126 14076	220nF +80/-20% 25V
2558	4822 126 14076	220nF +80/-20% 25V
2559	4822 124 41751	47uF 20% 50V
2560	4822 124 41751	47uF 20% 50V
2561	4822 126 13193	4,7nF 10% 63V
2562	4822 126 13193	4,7nF 10% 63V
2563	4822 126 13193	4,7nF 10% 63V
2564	4822 126 13193	4,7nF 10% 63V

RESISTORS

3501	4822 051 30221	220R 5% 0,062W
3502	4822 051 30221	220R 5% 0,062W
3503	4822 051 30681	680R 5% 0,062W
3504	4822 051 30681	680R 5% 0,062W
3505	4822 051 20109	10R 5% 0,1W
3506	4822 051 20109	10R 5% 0,1W
3507	4822 051 20109	10R 5% 0,1W
3508	4822 051 20109	10R 5% 0,1W
3509	4822 051 20109	10R 5% 0,1W
3510	4822 051 20109	10R 5% 0,1W
3511	4822 051 20109	10R 5% 0,1W
3512	4822 051 20109	10R 5% 0,1W
3513	4822 053 10229 ⚠	22R 5% 1W
3514	4822 053 10229 ⚠	22R 5% 1W
3515	4822 051 30102	1k 5% 0,062W
3516	4822 117 12925	47k 1% 0,063W
3518	4822 051 30124	120k 5% 0,062W
3521	4822 051 30102	1k 5% 0,062W
3522	4822 052 10568 ⚠	5R6 5% 0,33W
3525	4822 051 30102	1k 5% 0,062W
3526	4822 051 30102	1k 5% 0,062W
3527	4822 051 20822	8k2 5% 0,1W
3528	4822 051 20822	8k2 5% 0,1W
3529	4822 051 30103	10k 5% 0,062W
3530	4822 051 30103	10k 5% 0,062W
3531	4822 051 20684	680k 5% 0,1W
3532	4822 051 10102	1k 2% 0,25W
3533	4822 051 30103	10k 5% 0,062W
3534	4822 051 30103	10k 5% 0,062W
3535	4822 117 11817	1k2 1% 1/16W
3537	4822 051 20822	8k2 5% 0,1W
3538	4822 051 20822	8k2 5% 0,1W
3540	4822 051 30563	56k 5% 0,062W
4000	4822 051 20008	0R Jumper 0805
4001	4822 051 20008	0R Jumper 0805
4002	4822 051 20008	0R Jumper 0805
4003	4822 051 20008	0R Jumper 0805

ELECTRICAL PARTS LIST - CLASS D AMPLIFIER BOARD

RESISTORS

4006	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5007	2422 549 44101	FIL MAINS 100uH 2A2 W8051
5008	2422 549 44101	FIL MAINS 100uH 2A2 W8051
5503	4822 526 10704	FXD IND BEAD 100MHz 50R
5504	4822 526 10704	FXD IND BEAD 100MHz 50R
5506	4822 526 10704	FXD IND BEAD 100MHz 50R
5507	2422 536 00553	IND FXD 16RHBP S 47U PM10
5508	2422 536 00553	IND FXD 16RHBP S 47U PM10

DIODES

6503	4822 130 30621	1N4148
6504	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7501	9352 672 12118	IC SM TDA8929T/N1
7502	9352 707 87518	IC SM TDA8926TH/N2
7504	4822 130 42804	BC817-25
7505	4822 130 60373	BC857B

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - INTERCONNECT BOARD

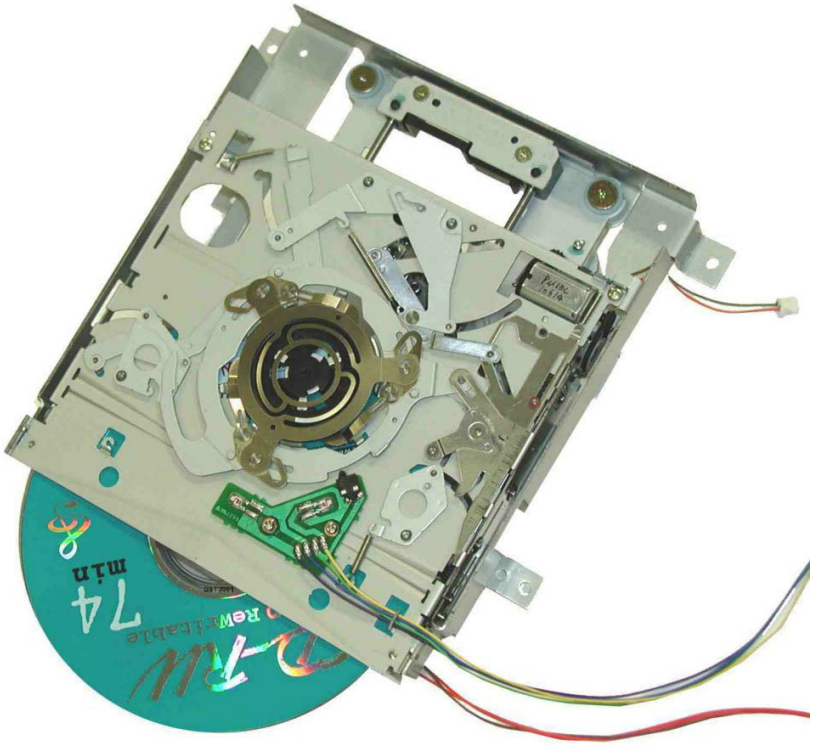
MISCELLANEOUS

1750	2422 025 17816	CON BM H 20P F 1.27 DFP B
1751	4822 265 10981	Flex Connector 15P
1752	4822 265 11515	Flex Connector 8P

CAPACITORS

2920	4822 051 30008	0R Jumper 0603
2921	4822 051 30008	0R Jumper 0603
2922	2020 552 94427	100pF 5% 50V
2923	2020 552 94427	100pF 5% 50V
2924	2020 552 94427	100pF 5% 50V
2925	2020 552 94427	100pF 5% 50V
2926	3198 017 44740	470nF 10V
2927	2020 552 94427	100pF 5% 50V
2928	3198 017 44740	470nF 10V
2929	2020 552 94427	100pF 5% 50V
2930	2020 552 94427	100pF 5% 50V
2931	2020 552 94427	100pF 5% 50V
2932	2020 552 94427	100pF 5% 50V
2933	2020 552 94427	100pF 5% 50V
2934	2020 552 94427	100pF 5% 50V
2935	2020 552 94427	100pF 5% 50V
2936	2020 552 94427	100pF 5% 50V
2937	2020 552 94427	100pF 5% 50V

Note : Only the parts mentioned in this list are normal service spare parts.



Slot Loader Module

(MP3 version)

Layout stage .5

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MP3 PART
Component Layout 10-12
Circuit Diagram 10-13

Partslist 10-14

Service Hints

In case of symptom „skipping tracks“ perform following actions:

1. VERIFY THE COMPLAINT

PLAYABILITY CHECK

Use CDDA SBC 444A: 4822 397 30245
TR 14 (600µ black dot) maximum at 01:15
TR 19 (fingerprint)
TR 10 (1000µ wedge)

Use CD-RW Printed Audio Disk 7104 099 96611
TR 3 (Fingerprint)
TR 8 (600µ black dot) maximum at 01:00

- playback of all these tracks without audible disturbance
- jump forward/backward within a reasonable time

2. CLEAN THE LENS

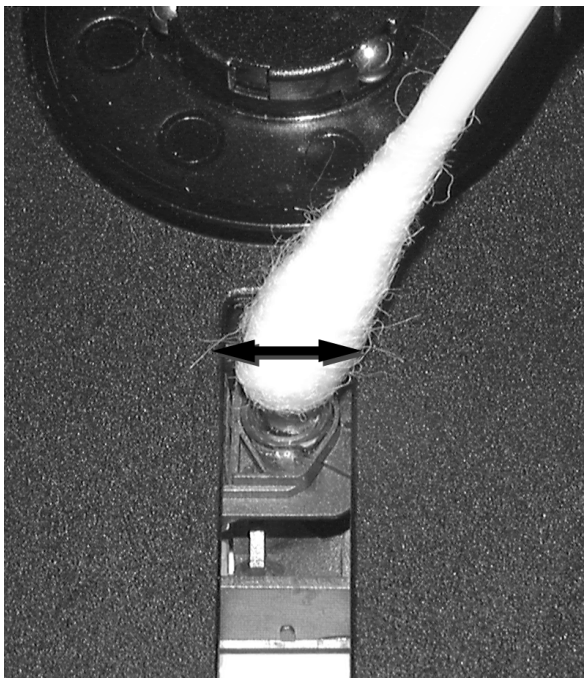
CD DRIVE – LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it in order to avoid that little particles make scratches on the lens.

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use “KODAK LENS CLEANER CAT 176 71 36”, available in normal photo shops.

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. It is advised to clean the lens gently (don’t press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

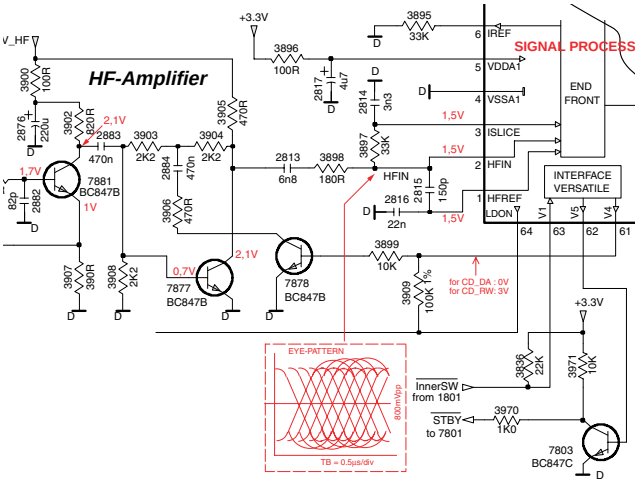
The direction of cleaning must be in the way as indicated in the picture below.



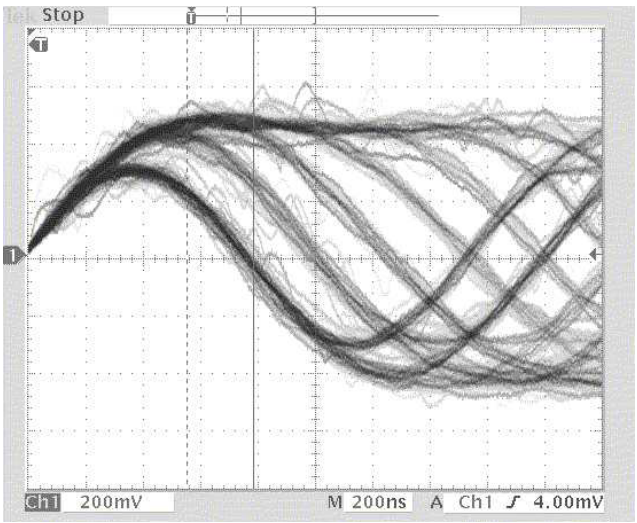
3. MEASURE THE EYE-PATTERN SIGNAL

EYE-PATTERN SIGNAL – JITTER MEASUREMENT

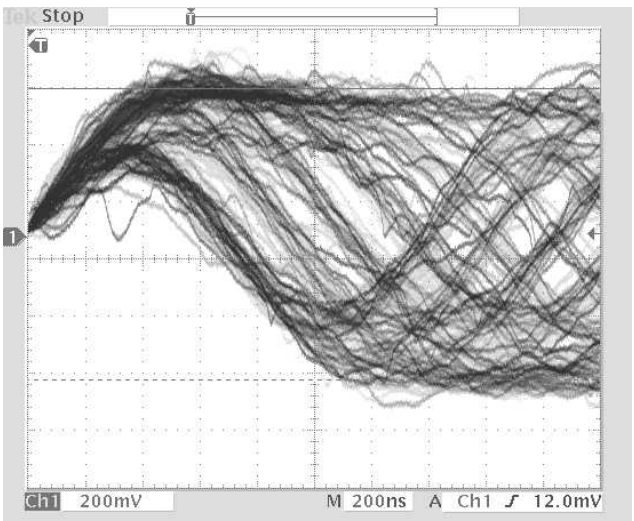
Measure the signal direct on resistor 3898 using an oscilloscope (see also chapter 10-9).



See below examples of the signal. Amplitude should read at least 700mVpp using SBC444A.



good



bad

If the oscilloscope shows a signal like the ‘bad’ one, and/or the amplitude decreases within 1minute - the CD drive has to be replaced.

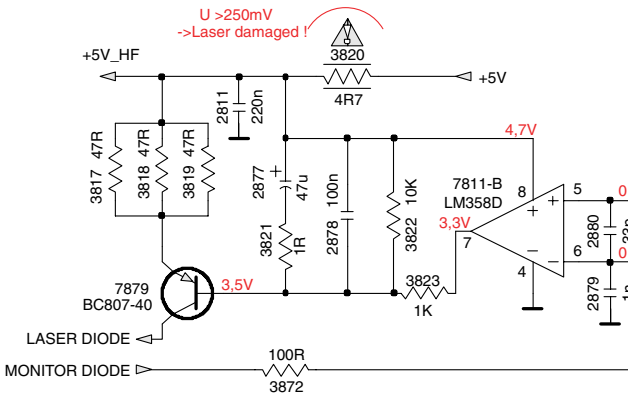
Service Hints

4. MEASURE THE LASER CURRENT

CD DRIVE – LASER CURRENT MEASUREMENT

The laser current can be measured as a voltage drop on resistor 3820. Typical value 170 - 190mV

Laser power control



5. MEASURE THE OFFSETS OF THE CD-DRIVE

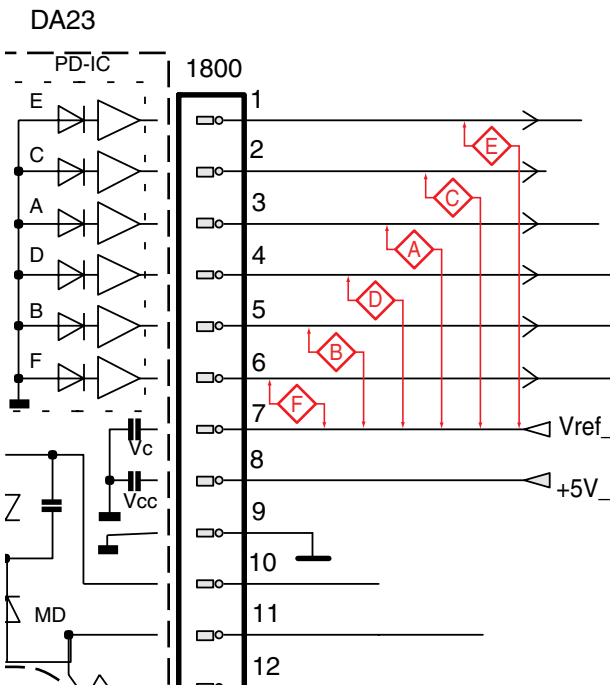
CD DRIVE – OFFSET MEASUREMENT

Each photodiode of the CD-drive may have an offset. This offset has to be compensated by the signal processor. A high offset of the CD-drive leads to poor playability of some CDs (skipping tracks).

Start the **Service Test Program** - section „Focus Test“ without a CD. Focus sensitivity = CD-RW.

Use a DC Millivoltmeter for measurement. The offsets can be measured direct on the connector. See drawing below.

The values from diode A-D should read 0±10mV. Diodes E and F are less critical.



If one of the offsets is higher than ±10mV the CD drive has to be replaced.

6. MEASURE THE OFFSETS OF THE CD10

SIGNAL PROCESSOR – OFFSET MEASUREMENT

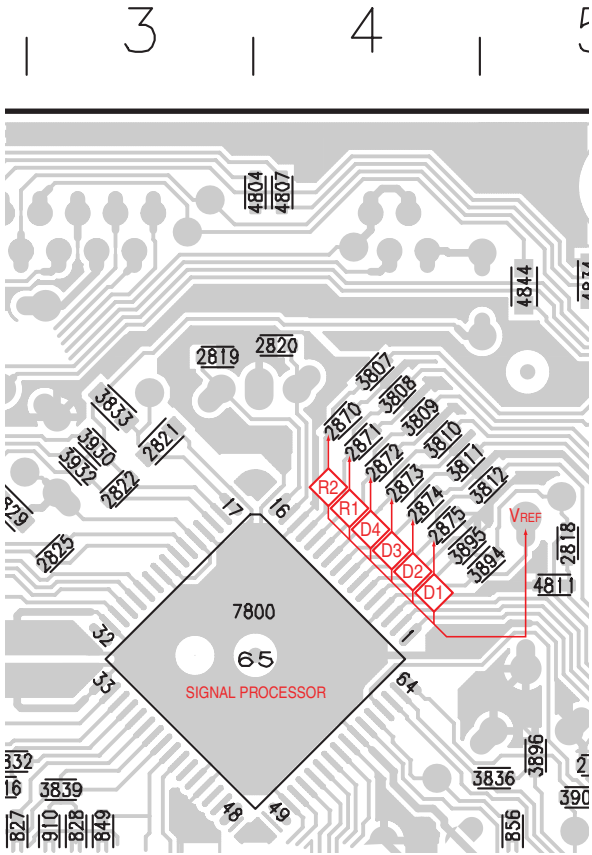
Each ADC input of the CD10 may have an offset too. Also this offset leads (together with the offsets of the CD Drive) to poor playability of some CDs (skipping tracks).

Start the **Service Test Program** - section „Focus Test“ using a CD-RW.

Use a DC Millivoltmeter for measurement. The offsets can be measured on capacitors near the signal processor. See drawing below.

The value should read 0mV±10mV.

CD Board Copperside view

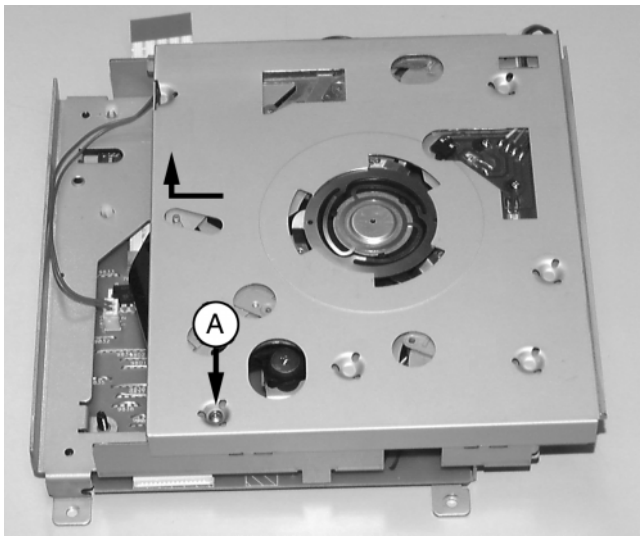


If one of the offsets is higher than ±10mV the signal processor has to be replaced.

If none of the measured offsets is higher than ±10mV - replace the part with the higher value.

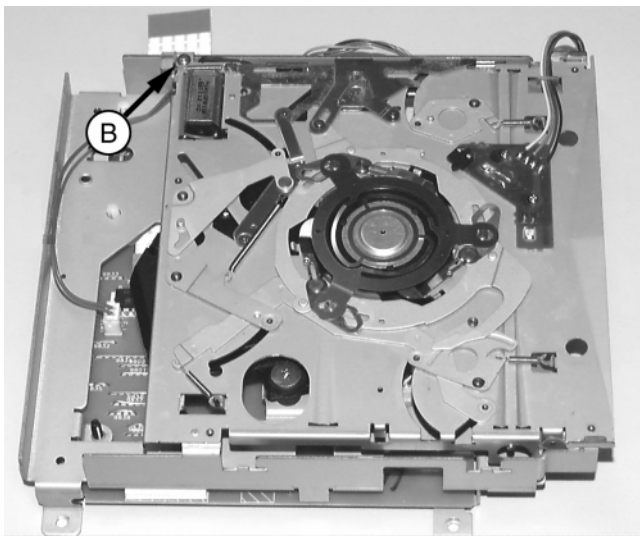
Service Hints - Replacing the CD Drive

1. Loosen screw Ⓐ
2. Remove cover as shown in picture 1



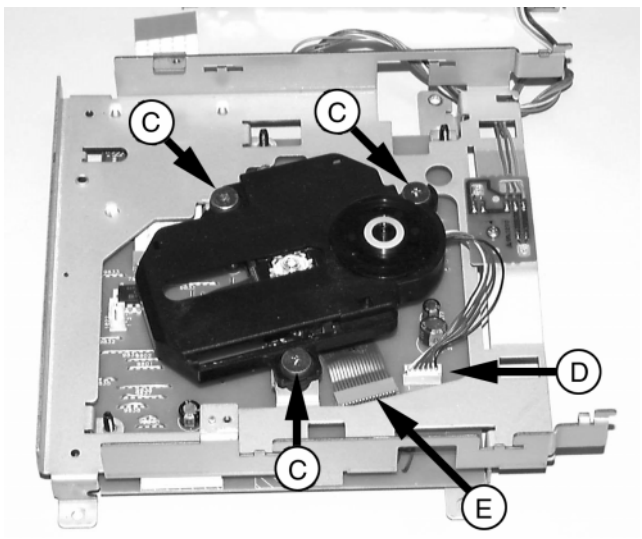
picture 1

3. Loosen screw Ⓑ (see picture 2)
4. Open slot loader



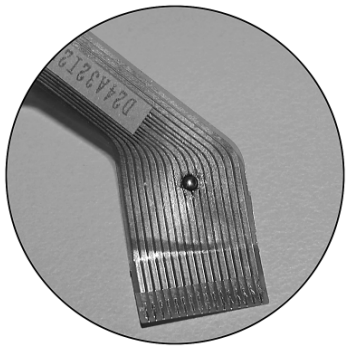
picture 2

5. Loosen 3x screw Ⓒ (see picture 3)
6. Disconnect wire Ⓓ and flex-foil Ⓔ
   Attention: Flex-foil Ⓔ is fixed to the printed circuit board with a double-sided adhesive tape.

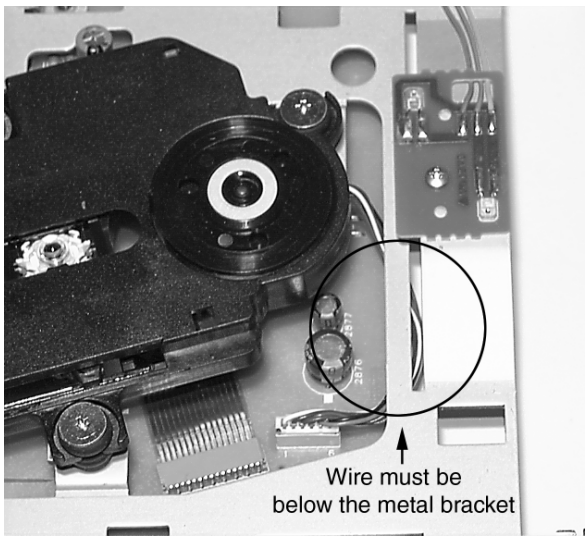


picture 3

Attention: The laser diode of this CD drive is protected against ESD by a solder joint which short-circuits the laser diode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connecting the drive to the set.

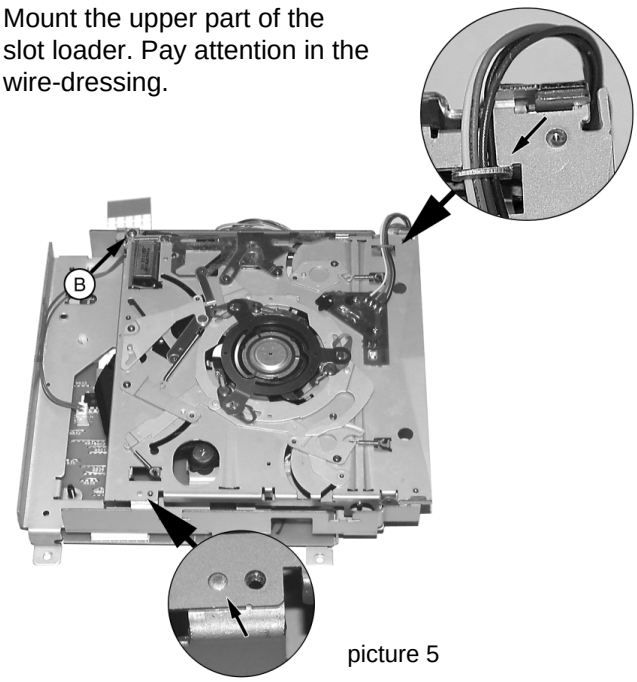


Don't forget to fix the flat-foil again. Pay attention in the wire-dressing. (see picture 4)



picture 4

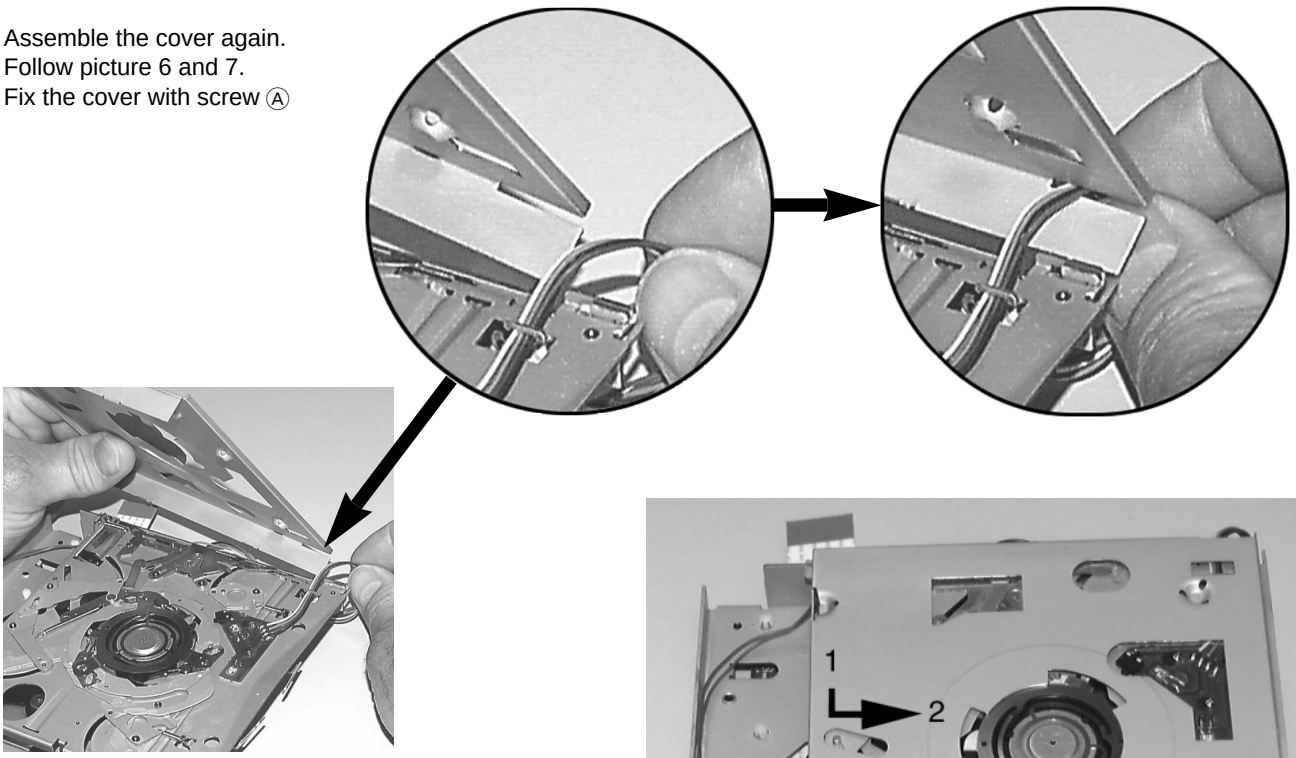
Mount the upper part of the slot loader. Pay attention in the wire-dressing.



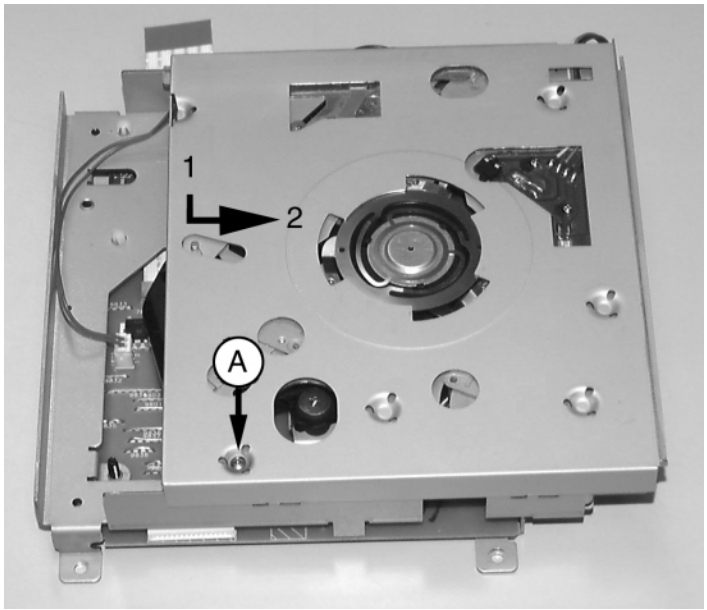
picture 5

Service Hints - Replacing the CD Drive

Assemble the cover again.
Follow picture 6 and 7.
Fix the cover with screw Ⓐ

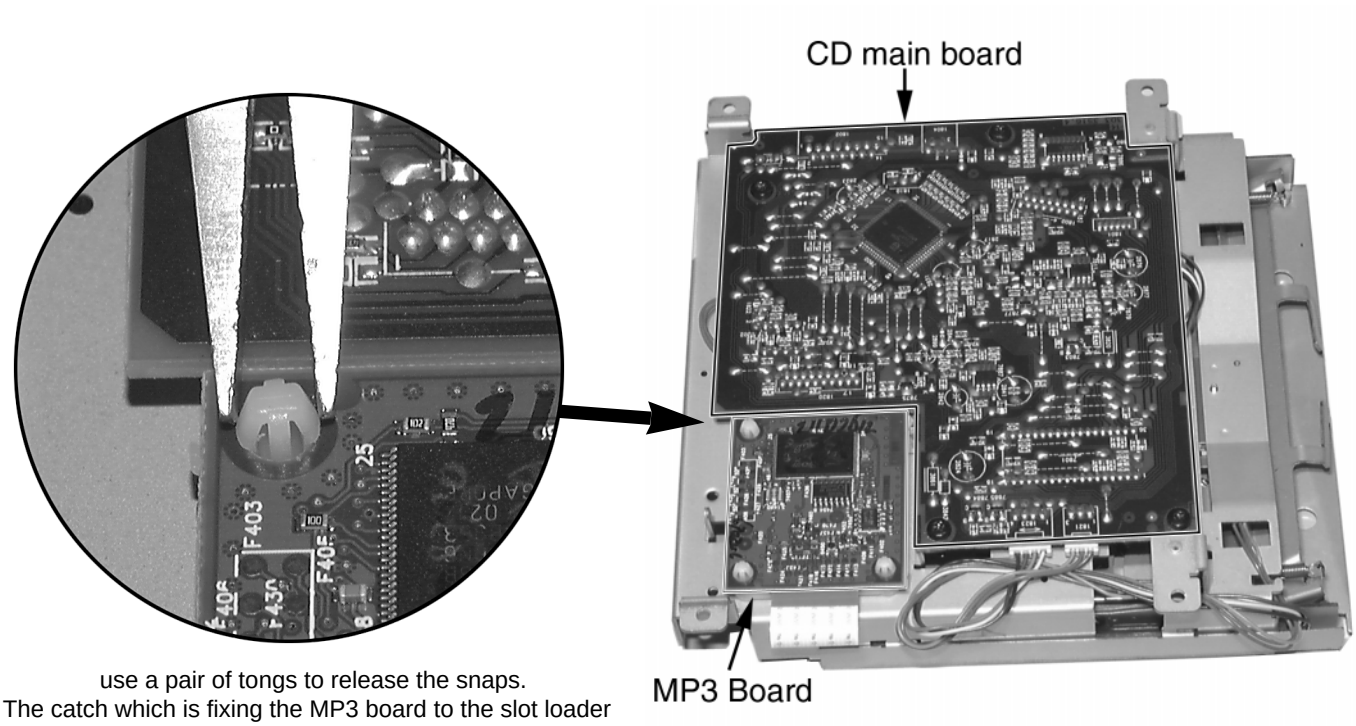


picture 6



picture 7

Service Hints - Service position



use a pair of tongs to release the snaps.
The catch which is fixing the MP3 board to the slot loader cabinet is available as a sparepart.

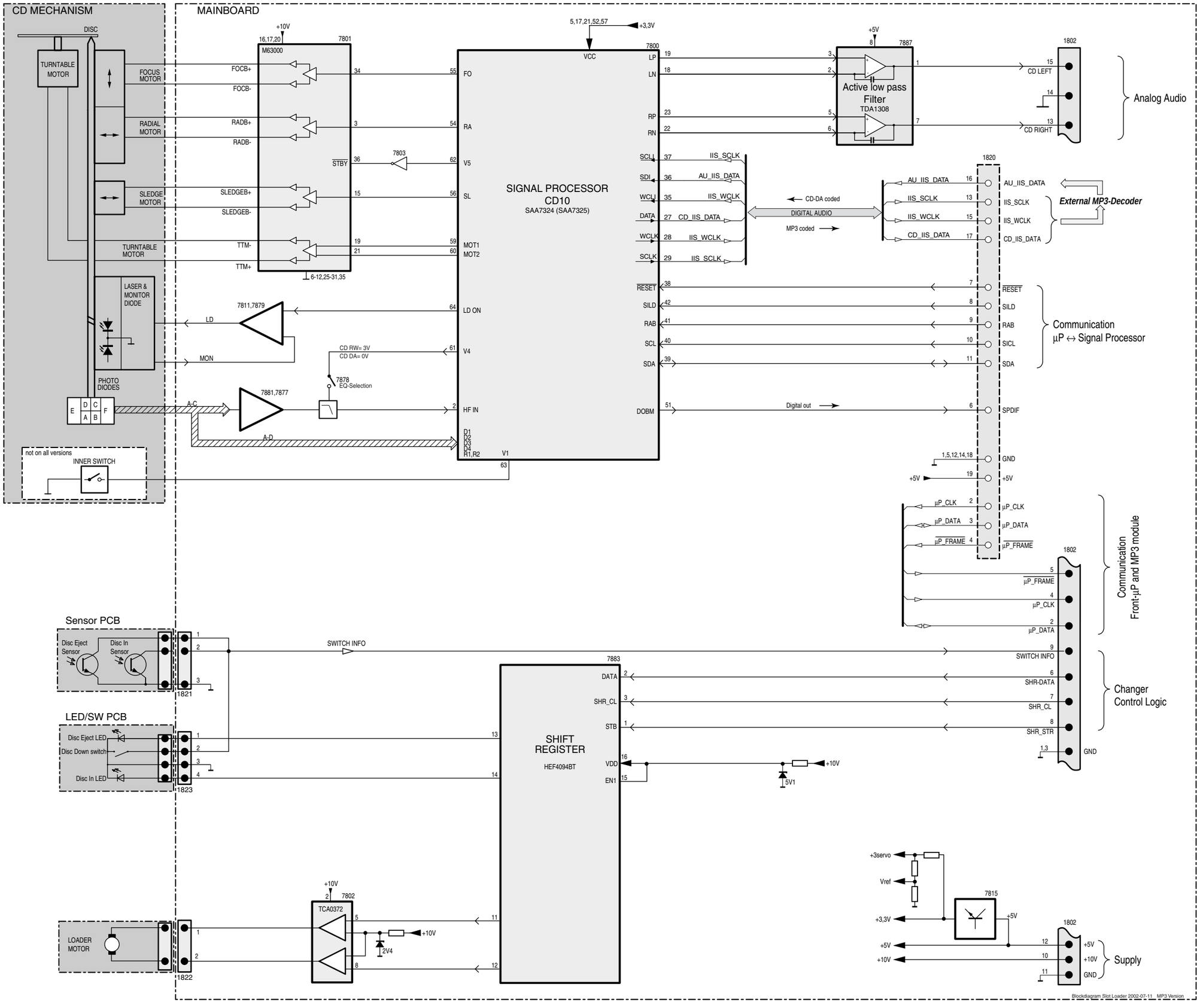
Pin description

SIGNAL PROCESSOR (CD10) SAA7325

Pin	*Name*	*Direction*	*Description*
1	HFREF	→ CD10	comparator common mode input
2	HFIN	→ CD10	comparator signal input
3	ISLICE	CD10 →	current feedback from data slicer
4	VSSA1	GND	analog ground 1
5	VDDA1	+3,3V	analog supply voltage 1
6	IREF	CD10 →	reference current output pin
7	VRIN	CD10 →	reference voltage for servo ADC's
8	D1	CD-drive → CD10	unipolar current input (central diode signal input)
9	D2	CD-drive → CD10	unipolar current input (central diode signal input)
10	D3	CD-drive → CD10	unipolar current input (central diode signal input)
11	D4	CD-drive → CD10	unipolar current input (central diode signal input)
12	R1	CD-drive → CD10	unipolar current input (satellite diode signal input)
13	R2	CD-drive → CD10	unipolar current input (satellite diode signal input)
14	VSSA2	GND	analog ground 2
15	CROUT	CD10 → X-TAL	crystal/resonator output
16	CRIN	X-TAL → CD10	crystal/resonator input
17	VDDA2	+3,3V	analog supply voltage 2
18	LN	CD10 →	DAC left channel differential output - negative
19	LP	CD10 →	DAC left channel differential output - positive
20	VNEG	GND	DAC negative reference input
21	VPOS	+3,3V	DAC positive reference input
22	RN	CD10 →	DAC right channel differential output - negative
23	RP	CD10 →	DAC right channel differential output - positive
24	SELPLL	CD10 →	selects whether internal clock multiplier PLL is used
25	TEST1	GND	test control input 1; this pin should be tied low
26	CL16	CD10 → NPC	16.9344 MHz system clock output
27	DATA	CD10 → NPC	serial data output (3-state)
28	WCLK	CD10 → NPC	word clock output (3-state)
29	SCLK	CD10 → NPC	serial bit clock output (3-state)
30	EF	CD10 → NPC	C2 error flag output (3-state)
31	TEST2	GND	test control input 2; this pin should be tied low
32	KILL	CD10 → Mute control	kill output (programmable; open-drain)
33	VSSD1	GND	digital ground 2
34	V2/V3	CD10 → NPC	versatile I/O: input versatile pin 2 or output versatile pin 3 (open-drain)
35	WCLI	NPC → CD10	word clock input (for data loopback to DAC)
36	SDI	NPC → CD10	serial data input (for data loopback to DAC)
37	SCLI	NPC → CD10	serial bit clock input (for data loopback to DAC)
38	RESETn	µP → CD10	power-on reset input (active low)
39	SDA	µP ↔ CD10	microcontroller interface data I/O line (open-drain output)
40	SCL	µP → CD10	microcontroller interface clock line input
41	RAB	µP → CD10	microcontroller interface R/W and load control line input (4-wire bus mode)
42	SILD	µP → CD10	microcontroller interface R/W and load control line input (4-wire bus mode)
43	STATUS	CD10 →	servo interrupt request line/decoder status register output (open-drain)
44	TEST3	GND	test control input 3; this pin should be tied low
45	RCK	→ CD10	subcode clock input
46	SUB	CD10 →	P-to-W subcode bits output (3-state)
47	SFSY	CD10 → µP	subcode frame sync output (3-state)
48	SBSY	CD10 → NPC	subcode block sync output (3-state)
49	CL11/4	CD10 →	11.2896 MHz or 4.2336 MHz (for microcontroller) clock output
50	VSSD2	GND	digital ground 3
51	DOBM	CD10 →	bi-phase mark output (externally buffered; 3-state)
52	VDDD1P	+3,3V	digital supply voltage 2 for periphery
53	CFLG	CD10 →	correction flag output (open-drain)
54	RA	CD10 → servo driver	radial actuator output
55	FO	CD10 → servo driver	focus actuator output
56	SL	CD10 → servo driver	slide control output
57	VDDD2C	+3,3V	digital supply voltage 3 for core
58	VSSD3	GND	digital ground 4
59	MOTO1	CD10 → servo driver	motor output 1; versatile (3-state)
60	MOTO2	CD10 →	motor output 2; versatile (3-state)
61	V4	CD10 → HF-preamp	versatile output pin 4
62	V5	CD10 → HF-preamp	versatile output pin 5
63	V1	innerswitch → CD10	versatile input pin 1
64	LDON	CD10 → HF-preamp	laser drive on output (open-drain)

10-7

BLOCK DIAGRAM CD Slot Loader MP3 Version



10-8

1801 F1 1804 F15 1810 B10 2809 D8 2810 H8 2811 D4
2812 D7 2814 E9 2815 E10 2816 F10 2817 E9 2818 D9
2819 B10 2820 B10 2822 B11 2823 B11 2824 H5 2825 B12
2827 C14 2828 D15 2830 G13 2832 G7 2833 E5 2834 G14
2846 H8 2847 H7 2848 H8 2849 H7 2854 G6 2856 H6
2860 A7 2861 A7 2863 B7 2864 C7 2865 C7 2869 D3
2870 A8 2871 A8 2872 B8 2873 B8 2874 C8 2875 C8
2877 D4 2878 D5 2879 E6 2880 D6 2881 F7 2882 F7
2883 E8 3801 A7 3802 A7 3803 A7 3804 B7 3805 B7
3806 C7 3807 A8 3809 A8 3810 B8 3811 B8 3812 C8
3813 C6 3814 C6 3815 C6 3817 D4 3818 D4 3819 D4
3820 C5 3821 D4 3822 D5 3823 E5 3825 D6 3826 D7
3827 D6 3828 E6 3829 A11 3830 D9 3831 C14 3833 A10
3834 B15 3835 B15 3836 G10 3837 C15 3838 F13 3839 D15
3841 G7 3842 G6 3843 C15 3844 G13 3845 E15 3846 G8
3847 H8 3849 D14 3850 H6 3851 H6 3852 E3 3853 E4
3854 G7 3855 G7 3861 G6 3862 G7 3866 E3 3869 H8
3871 H7 3872 E4 3873 G6 3878 A14 3879 H7 3880 H14
3881 H14 3882 H7 3887 G8 3889 A14 3891 D7 3892 D7
3894 D9 3895 D10 3896 E9 3897 E9 3898 E9 3900 E7
3901 E7 3902 E8 3903 E8 3904 E8 3905 E9 3906 F8
3908 F8 3909 F10 3910 D15 3911 G14 3916 C14 3917 G12
3970 G10 3998 G1 3999 H1 4805 G11 4809 D15 4810 E15
6881 H14 7800 C12 7803 G11 7811-A D8 7811-B D5 7875 H14
7877 F8 7878 F9 7879 E4

SLOT LOADER CD/MP3
main board
part 1 / 2

SANYO
DA23

Laser power control

HF-Amplifier

drive detection

Voltage stabilization

7801
M63000SP

7800
SAA7325

ADC
BITSTREAM DAC
PROCESSING PRE-
FUNCTION CONTROL
PROCESSOR AUDIO
VREF GEN.
END FRONT
INTERFACE VERSATILE
INTERFACE SER. DATA
INTERF. LOOPBACK SER. DATA
INTERF. VERSAT.
MICROCONTROLLER INTERFACE
DEMOD EFM
PLL DIG.
SRAM ADDR
CONTROL MOTOR
CORR. ERROR
DET. PEAK
INTERF. EBU
SUBCODE PROCESSOR
STAGES OUTPUT

to 7810 on part 2
to 1820 on part (MP3 interface)
to/from 1802+1820 on part 2 (front µP+MP3 interface)
to/from 1802+1820 on part 2 (front µP+MP3 interface)

for MP3 version only

DACLEFT_neg
DACLEFT_pos
DACRIGHT_neg
DACRIGHT_pos
CD_IIS_DATA
IIS_WCLK
IIS_SCLK
IIS_WCLK
AU_IIS_DATA
IIS_SCLK
PORE
SDA
SICL
RAB
SILD
SPDIF
SPDIF_GND

R2 (CD10)
R1 (CD10)
D4 (CD10)
D3 (CD10)
D2 (CD10)
D1 (CD10)

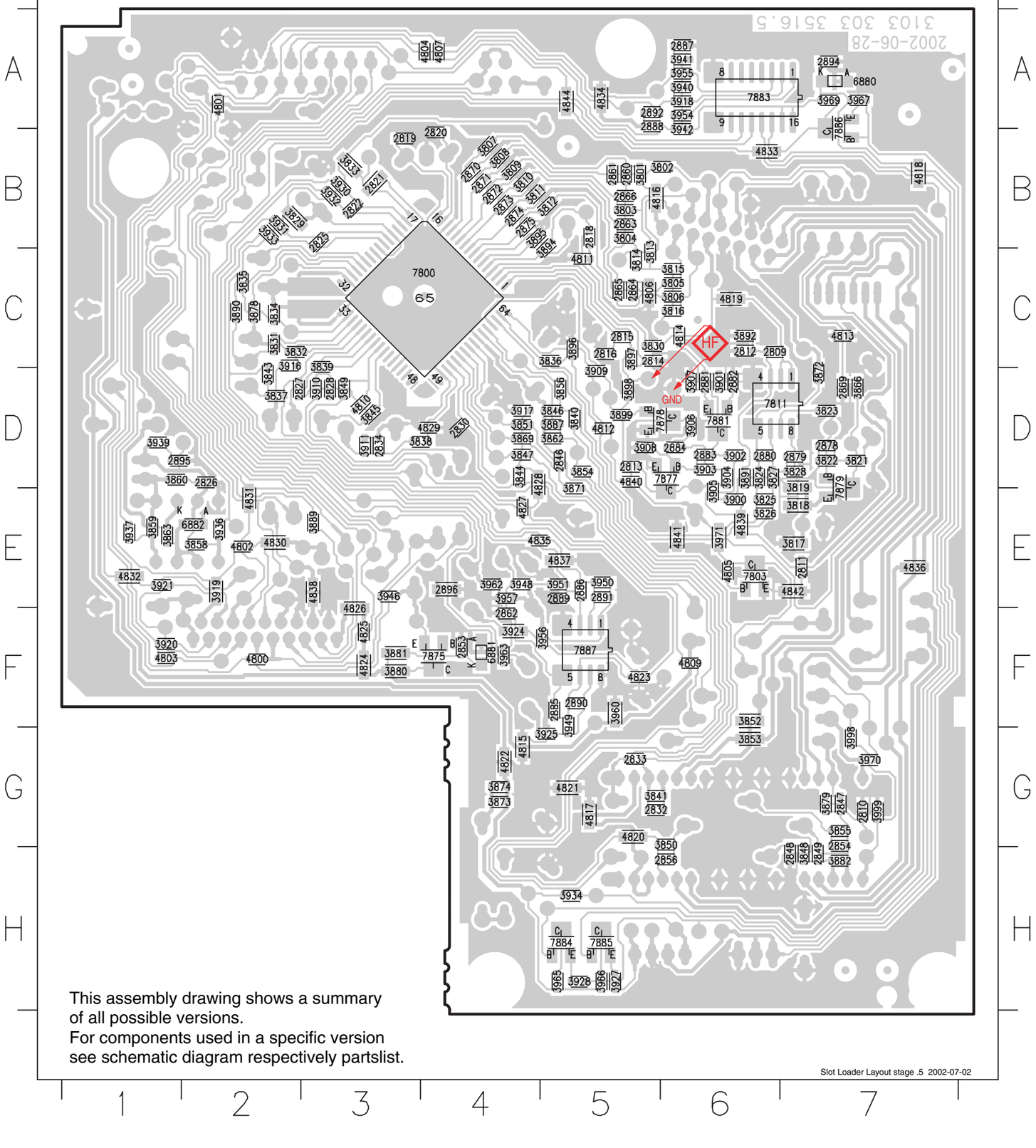
Vref_CD10
+5V_HF
Vref_mech
Vref
+3servo
Dr
InnerSW to 7800
InnerSW from 1801
STBY to 7801
brake
accelerate
SLED
Inner sw.
DISC
Tracking Coil
Focus Coil
FOCUS
TRACK
SLIDE
during focus search
T = 1 s
CD-DA: 182mV, CD-RW: 215mV
U >250mV ->Laser damaged !
for CD_DA : 0V for CD_RW: 3V
EYE-PATTERN
TB = 0.5µs/div
M1, M2, SL, RA, FO

...V DC voltages measured in *PLAY MODE* with following conditions: "+10V" = 10V "+5V" = 5V
EVM

Tohei Slot Loader MP3 Version 2002 07 14

10-9

CD Board Copperside view



Mapping

2809 C6	2861 B5	2895 D1	3829 B2	3860 D1	3904 D6	3946 E3	4810 D3	4839 E6
2810 G7	2862 F4	2896 E4	3830 C5	3862 D5	3905 E6	3948 E4	4811 C5	4840 D5
2811 E7	2863 B5	3801 B5	3831 C2	3863 E1	3906 D6	3949 F5	4812 D5	4841 E6
2812 C6	2864 C5	3802 B6	3832 C2	3866 D7	3907 D6	3950 E5	4813 C7	4842 E7
2813 D5	2865 C5	3803 B5	3833 B3	3869 D4	3908 D5	3951 E5	4814 C6	4844 A5
2814 C5	2866 B5	3804 B5	3834 C2	3871 E5	3909 D5	3954 A6	4815 G4	6880 A7
2815 C5	2869 D7	3805 C6	3835 C2	3872 D7	3910 D3	3955 A6	4816 B5	6881 F4
2816 C5	2870 B4	3806 C6	3836 C5	3873 G4	3911 D3	3956 F5	4817 G5	6882 E2
2818 B5	2871 B4	3807 B4	3837 D2	3874 G4	3916 C2	3957 E4	4818 B7	7800 C4
2819 B3	2872 B4	3808 B4	3838 D3	3878 C2	3917 D4	3960 F5	4819 C6	7803 E6
2820 B4	2873 B4	3809 B4	3839 C3	3879 G7	3918 A6	3962 E4	4820 G5	7811 D6
2821 B3	2874 B4	3810 B4	3840 D5	3880 F3	3919 E2	3963 F4	4821 G5	7875 F4
2822 B3	2875 B4	3811 B4	3841 G5	3881 F3	3920 F1	3965 H5	4822 G4	7877 D6
2825 B3	2878 D7	3812 B5	3843 D2	3882 H7	3921 E1	3966 H5	4823 F5	7878 D5
2826 D2	2879 D7	3813 C5	3844 D4	3887 D5	3924 F4	3967 A7	4824 F3	7879 D7
2827 D2	2880 D6	3814 C5	3845 D3	3889 E3	3925 G5	3969 A7	4825 F3	7881 D6
2828 D3	2881 D6	3815 C6	3846 D5	3890 C2	3927 H5	3970 G7	4826 F3	7883 A6
2830 D4	2882 D6	3816 C6	3847 D4	3891 D6	3928 H5	3971 E6	4827 E4	7884 H5
2832 G5	2883 D6	3817 E7	3848 H7	3892 C6	3930 B3	3998 G7	4828 D4	7885 H5
2833 G5	2884 D6	3818 E7	3849 D3	3894 B5	3931 B2	3999 G7	4829 D4	7886 A7
2834 D3	2885 F5	3819 D7	3850 G6	3895 B4	3932 B3	4800 F2	4830 E2	7887 F5
2846 D5	2886 E5	3821 D7	3851 D4	3896 C5	3933 B2	4801 A2	4831 E2	
2847 G7	2887 A6	3822 D7	3852 F6	3897 C5	3934 H5	4802 E2	4832 E1	
2848 H7	2888 A5	3823 D7	3853 G6	3898 D5	3936 E2	4803 F1	4833 B6	
2849 H7	2889 E5	3824 D6	3854 D5	3899 D5	3937 E1	4804 A4	4834 A5	
2853 F4	2890 F5	3825 E6	3855 G7	3900 E6	3939 D1	4805 E6	4835 E4	
2854 G7	2891 E5	3826 E6	3856 D5	3901 D6	3940 A6	4806 C5	4836 E7	
2856 H6	2892 A5	3827 D6	3858 E2	3902 D6	3941 A6	4807 A4	4837 E5	
2860 B5	2894 A7	3828 D7	3859 E1	3903 D6	3942 B6	4809 F6	4838 E3	

10-10

1802 E12 1820 B13 1821 H3 | 1822 E12 1823 F3 2826 F3 | 2840 C6 2841 A6 2842 B10 | 2862 C7 2885 B7 2886 A6 | 2887 G9 2888 G9 2889 C6 | 2890 B8 2891 A7 2892 G9 | 2894 G6 2895 E3 2896 C8 | 2899 A10 3858 E3 3859 F4 | 3860 E3 3863 D5 3918 F7 | 3919 B12 3920 B12 3921 B12 | 3924 A9 3925 B9 3927 G4 | 3928 F4 3930 A5 3931 B5 | 3932 A5 3933 B5 3934 E8 | 3936 D4 3937 E4 3939 E3 | 3940 F9 3941 F9 3942 F9 | 3946 H10 3948 C7 3949 B8 | 3950 A7 3951 C6 3954 G7 | 3955 G7 3956 C5 3957 C5 | 3960 A5 3962 A10 3963 B10 | 3965 F5 3966 G4 3967 H4 | 3968 D5 3969 H4 4800 G11 | 4801 G11 4802 G11 4803 G11 | 4804 F11 4807 G11 6880 F8 | 6882 D5 7802-A E4 7802-B D3 | 7883 E7 7884 F5 7885 G5 | 7886 H5 7887-A A6 7887-B B8

SLOT LOADER CD/MP3
main board
part 2 / 2

+5V 3960 100R 100u 2841 4,3V
DACLEFT_pos 3932 22K
DACLEFT_neg 3930 22K
from 7800 on part 1 (CD10)
2886 100p 2V
TDA1308T 7887-A 2,1V 2891 220p 3950 10K
3924 100R 2899 10u 3962 47K GNDA
DACRIGHT_pos 3933 22K
DACRIGHT_neg 3931 22K
TDA1308T 7887-B 2,1V 2885 100p 2890 220p 3949 10K
3925 100R 2842 10u 3963 47K GNDA
3956 1K 3951 10K 2889 220p 3948 10K
2,2V 3957 1K 2840 220u 2862 220p GNDA
2896 47n D GNDA

+10V 3863 1K8 6882 BZX284-B2V4
7802-B TCA0372 2,4V 3936 10K 3858 10K 3939 47R 2895 100n
7802-A TCA0372 3937 10K 3860 47R 2826 100n 3859 10K

	7883 Pin 11	7883 Pin 12
no movement	5V	5V
Moving in	0V	5V
Moving out	5V	0V

Loader Motor
1822 PH-B 0,6V 0,6V

LED/SW PCB
Disc Eject LED
Disc Down SW
Disc In LED
1823 PH-S
3928 180R 3927 180R
3965 100R 7884 BC847B 0V 0,1V
3966 100R 7885 BC847B 0V 0,1V

Sensor PCB
Disc Eject Sensor
Disc In / 8cm Sensor
1821 PH-S
+5V_mech 3967 47K
+5V_mech 3969 10K 5,1V 7886 BC847B 0V

8 7883 HEF4094BT
10 9 11 12 13 14 7 6 5 4
STB EN1 SRG8 16 15 1 3 2
2894 47n 5,1V
3918 470R 3955 1K 3954 1K

+5V 5V
+10V 10V
+5V_mech 5,1V
6880 PDZ-5.1B
3934 470R
10K 3942 10K 3941 10K 3940
2888 220p 2887 220p 2892 47p
3968 2R2
4804
SW_INFO SHR_STR SHR_CL SHR_DATA
uP_FRAME uP_CLK uP_DATA
to 1820 (MP3 interface)

1802
15 GNDA LEFT
14 GNDA
13 RIGHT
12 +5V
11 GND
10 +10V
9 SW_INFO
8 SHR_STR
7 SHR_CL
6 SHR_DATA
5 uP_FRAME
4 uP_CLK
3 GND
2 uP_DATA
1 GND
MP3-CD VERSION (15pin)

to 1802 (front µP)
uP_CLK 3919 470R
uP_DATA 3920 470R
uP_FRAME 3921 470R
SPDIF_GND
SPDIF
PORE
SILD
RAB
SICL
SDA
IIS_SCLK
IIS_WCLK
AU_IIS_DATA
CD_IIS_DATA
+5V 5V
to/from 7800 on part 1 (CD10)

1820
1 GND
2 µP_CLK
3 µP_DATA
4 µP_FRAME
5 SPDIF_GND
6 SPDIF
7 CD10_RESET
8 SILD
9 RAB
10 SICL
11 SDA
12 GND
13 IIS_SCLK
14 GND
15 IIS_WLCLK
16 AU_IIS_DATA
17 CD_IIS_DATA
18 GND
19 +5V
FMN
MP3-CD VERSION (19pin)

...V DC voltages measured in *PLAY MODE* with following conditions: "+10V" = 10V "+5V" = 5V
EVM

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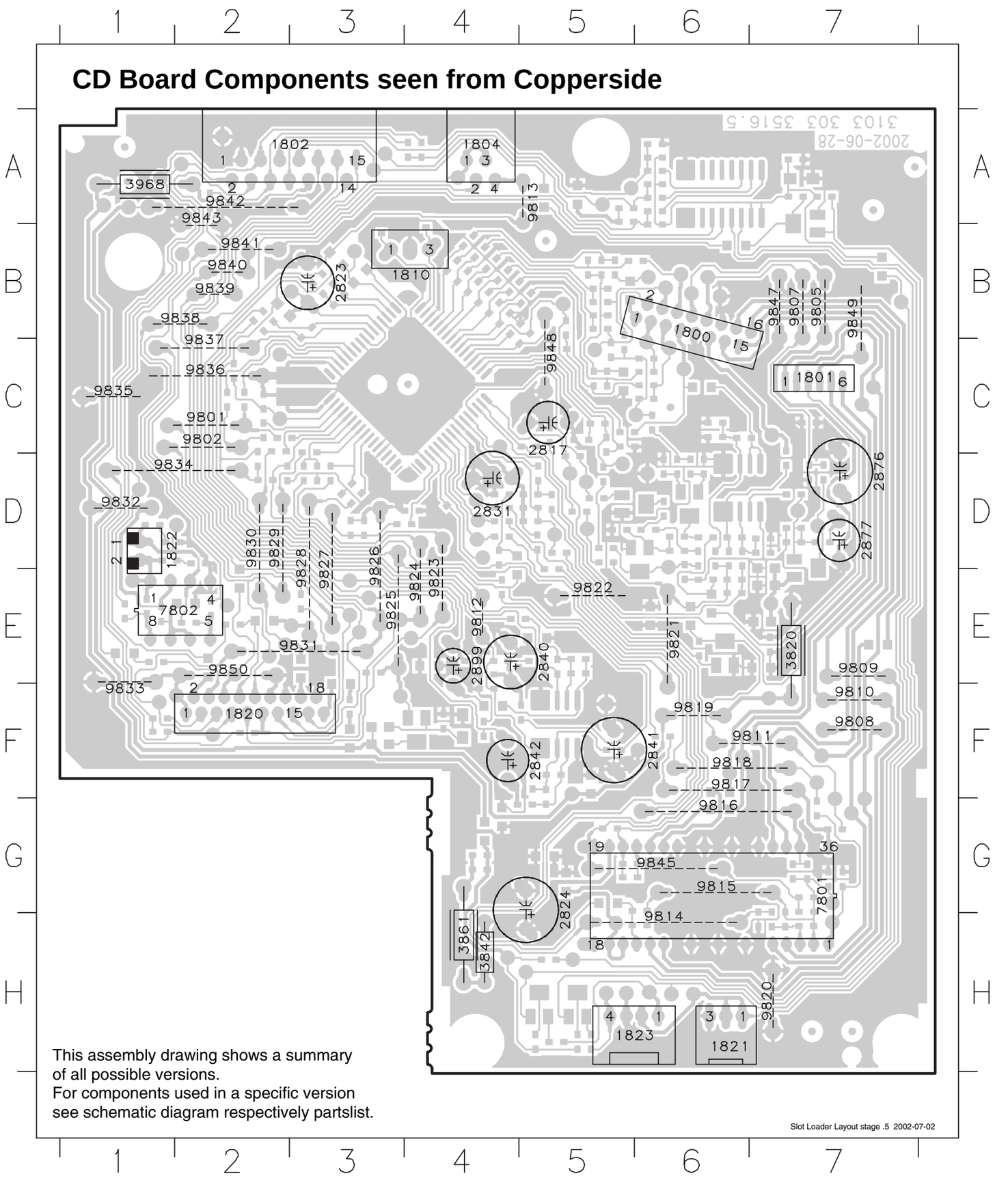
CD Board Components seen from Copperside



This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

Slot Loader Layout stage .5 2002-07-02

Mapping

1800 B6	1823 H5	2876 D7	7802 E2	9811 F7	9819 F6	9827 E3	9835 C1	9843 B2
1801 C7	2817 C5	2877 D7	9801 C2	9812 E4	9820 H7	9828 D3	9836 C2	9845 G6
1802 A2	2823 B3	2899 E4	9802 D2	9813 A4	9821 E6	9829 D2	9837 C2	9847 B7
1804 A4	2824 G5	3820 E7	9805 B7	9814 H6	9822 E5	9830 D2	9838 B2	9848 C5
1810 B4	2831 D4	3842 H4	9807 B7	9815 G6	9823 E4	9831 E3	9839 B2	9849 B7
1820 F2	2840 E5	3861 H4	9808 F7	9816 G6	9824 E4	9832 D1	9840 B2	9850 E2
1821 H6	2841 F6	3968 A1	9809 E7	9817 F6	9825 E4	9833 F1	9841 B2	
1822 D1	2842 F5	7801 G6	9810 F7	9818 F6	9826 D3	9834 D1	9842 A2	

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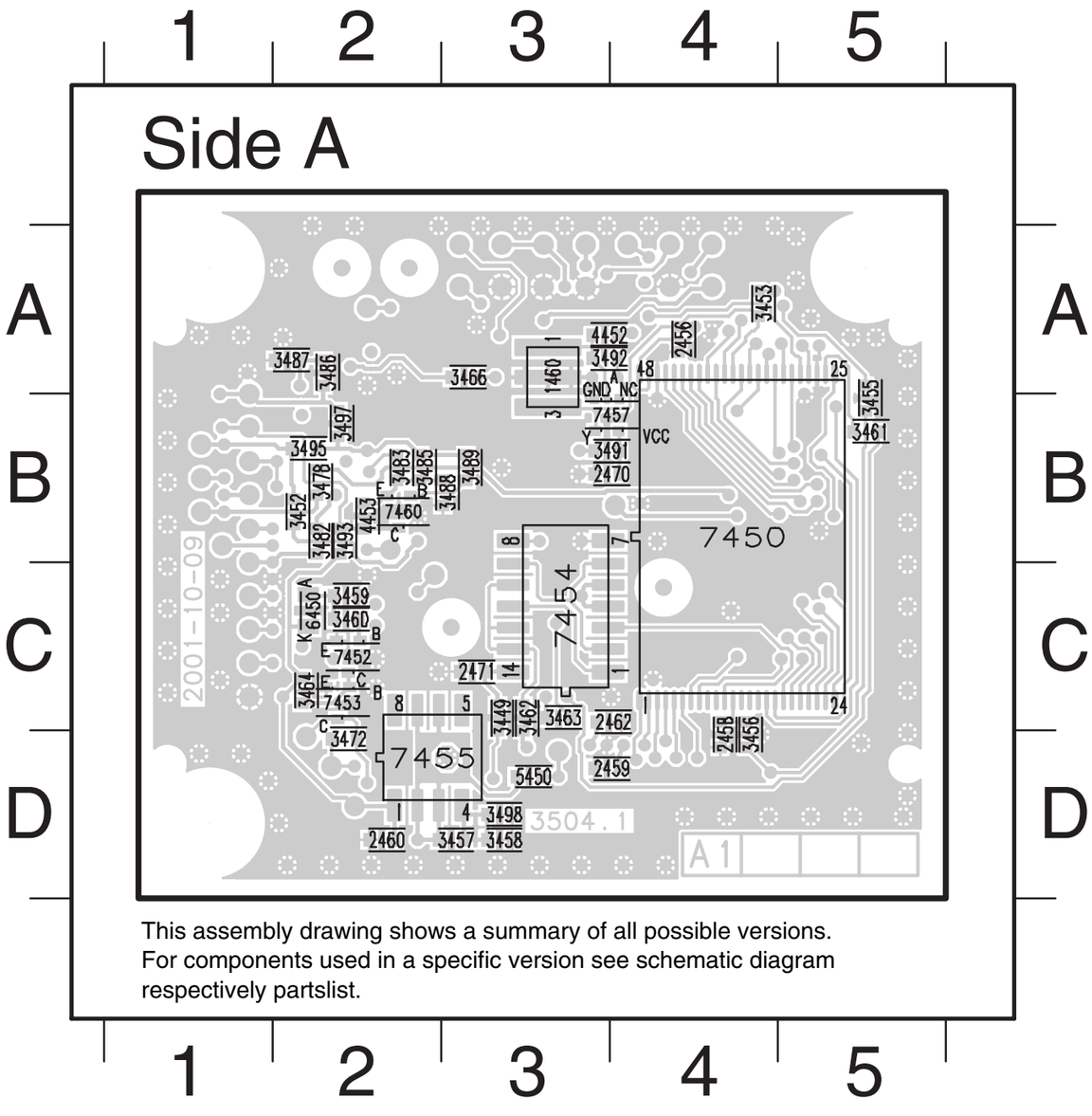
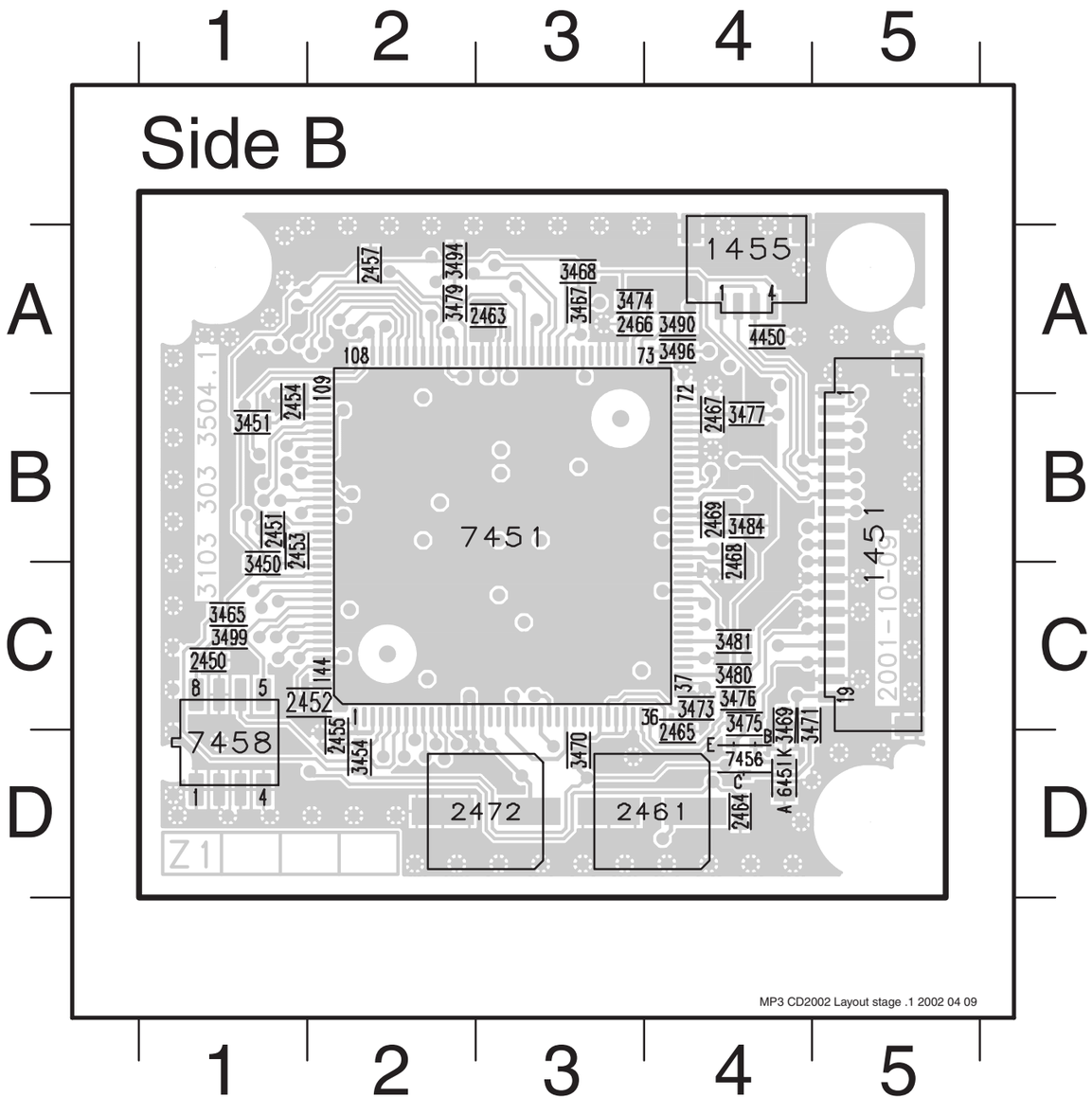
1460 A3	3449 C3	3460 C2	3482 B2	3492 A3	6450 C2
2456 A4	3452 B2	3461 B5	3483 B2	3493 B2	7450 B4
2458 D4	3453 A4	3462 C3	3485 B2	3495 B2	7452 C2
2459 D4	3455 B5	3463 C3	3486 A2	3497 B2	7453 C2
2460 D2	3456 D4	3464 C2	3487 A2	3498 D3	7454 C3
2462 C4	3457 D3	3466 A3	3488 B3	4452 A3	7455 D2
2470 B4	3458 D3	3472 D2	3489 B3	4453 B2	7457 B4
2471 C3	3459 C2	3478 B2	3491 B4	5450 D3	7460 B2



This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

1451 B5	2457 A2	2469 B4	3469 C4	3479 A2	4450 A4
1455 A4	2461 D4	2472 D3	3470 D3	3480 C4	6451 D4
2450 C1	2463 A3	3450 C1	3471 C4	3481 C4	7451 B3
2451 B1	2464 D4	3451 B1	3473 C4	3484 B4	7456 D4
2452 C2	2465 D4	3454 D2	3474 A3	3490 A4	7458 D1
2453 B1	2466 A3	3465 C1	3475 C4	3494 A2	
2454 B1	2467 B4	3467 A3	3476 C4	3496 A4	
2455 D2	2468 B4	3468 A3	3477 B4	3499 C1	



MP3 CD2002 Layout stage .1 2002 04 09

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MP3-CD-2002

DSP

For Flash version: TMS320VC5416
For ROM version: TMS320VC5406

7451

Text version only

EEPROM 7458 M24C32

only for FLASH version

Flash EPROM 7450 Am29LV800B

Voltage stabilisation 7455 LM317D

for 5V front uP

.... only for FLASH version
* .... only for ROM version

2451 B5
2452 B2
2453 B4
2454 B7
2455 C2
2456 C12
2457 D9
2458 C10
2459 D2
2460 E13
2461 D12
2462 D2
2463 D8
2464 G12
2465 G2
2466 G8
2467 H6
2468 H4
2469 H5
2470 D9
2471 E11
2472 D1
3449 E11
3450 A4
3451 B7
3452 H3
3453 A12
3454 C1
3455 C9
3456 C10
3457 D13
3458 D14
3459 F13
3460 F13
3461 E12
3462 E2
3463 F1
3464 F13
3465 A2
3466 H8
3467 F8
3468 F8
3469 E13
3470 F1
3471 E13
3472 H9
3473 G2
3474 G8
3475 G2
3476 H2
3477 H7
3478 B6
3479 H8
3480 H2
3481 H3
3482 H5
3483 H6
3484 H5
3485 I11
3486 I13
3487 I12
3488 I12
3489 I12
3490 H8
3491 D9
3492 F9
3493 H12
3494 H8
3495 H11
3496 H8
3497 I13
3498 D14
3499 A2
4450 C13
4452 F9
4453 I11
5450 B3
6450 E13
6451 E13
7450 A10
7451 D5
7452 F13
7453 F12
7454-A G11
7454-B F11
7454-C F11
7454-D G11
7455 D13
7456 E12
7457 E9
7458 A1
7460 I12

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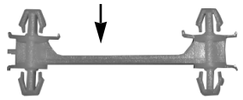
ELECTRICAL PARTSLIST CD MODULE MP3 Version

MECHANICAL PARTS

	3103 308 54630	complete mechanic (CD drive included)
	3103 309 05450	CD Drive DA23
	3103 304 73480	Suspension for CD Drive
202	3103 304 71560	CATCH MP3 Board - SET

This part is used to fix the MP3 Board on the mechanic.



MISCELLANEOUS

1800	4822 267 11028	CONNECTOR, CD-DRIVE (16 pins)
1801	2422 025 12272	CONNECTOR, CD-DRIVE (6 pins)
1802	4822 265 10979	FFC-CONNECTOR, 15P
8010	3103 308 92680	FLEX FOIL CABLE 19P 80mm AD

CAPACITORS

2809 ©	2222 867 15339	33pF	5%	50V
2810 ©	3198 017 34730	47nF	10%	16V
2811 ©	4822 126 13879	220nF	20%	16V
2812 ©	4822 126 13879	220nF	20%	16V
2813 ©	5322 126 11582	6,8nF	10%	63V
2814 ©	5322 126 11579	3,3nF	10%	63V
2815 ©	4822 122 33753	150pF	5%	50V
2816 ©	4822 126 14494	22nF	10%	25V
2817	4822 124 22726	4,7µF	20%	35V
2818 ©	3198 017 34730	47nF	10%	16V
2821 ©	4822 126 14585	100nF	10%	50V
2822 ©	4822 126 13344	1,5nF	5%	63V
2823	4822 124 42383	220µF	20%	4V
2824	2022 020 00625	220µF	20%	16V
2825 ©	4822 126 13344	1,5nF	5%	63V
2826 ©	2238 586 59812	100nF	10%	50V
2827 ©	5322 126 11578	1nF	10%	63V
2828 ©	4822 126 11669	27pF	10%	50V
2830 ©	3198 017 41050	1µF	20%	10V
2831	4822 124 81286	47µF	20%	16V
2832 ©	2238 586 59812	100nF	10%	50V
2833 ©	2238 586 59812	100nF	10%	50V
2840	4822 124 42383	220µF	20%	4V
2841	4822 124 41643	100µF	20%	16V
2842	3198 028 41090	10µF	20%	35V
2846 ©	5322 126 11578	1nF	10%	63V
2847 ©	5322 126 11578	1nF	10%	63V
2848 ©	5322 126 11578	1nF	10%	63V
2849 ©	5322 126 11578	1nF	10%	63V
2853 ©	5322 126 11583	10nF	10%	63V
2854 ©	2238 586 59812	100nF	10%	50V
2856 ©	4822 126 13879	220nF	20%	16V
2860 ©	4822 126 14508	180pF	5%	50V
2861 ©	4822 126 14241	330pF		50V
2862 ©	4822 126 13883	220pF	5%	50V
2863 ©	4822 126 14508	180pF	5%	50V
2864 ©	4822 126 14508	180pF	5%	50V
2865 ©	4822 126 14508	180pF	5%	50V
2866 ©	4822 126 14508	180pF	5%	50V
2870 ©	4822 126 13883	220pF	5%	50V
2871 ©	4822 126 13883	220pF	5%	50V
2872 ©	4822 126 13883	220pF	5%	50V
2873 ©	4822 126 13883	220pF	5%	50V
2874 ©	4822 126 13883	220pF	5%	50V
2875 ©	4822 126 13883	220pF	5%	50V
2876	4822 124 12245	220µF	20%	16V
2877	4822 124 80483	47µF	20%	6,3V
2878 ©	2238 586 59812	100nF	10%	50V
2879 ©	5322 126 11578	1nF	10%	63V
2880 ©	2222 867 15339	33pF	5%	50V

CAPACITORS

2881 ©	4822 126 14315	390pF	5%	50V
2882 ©	4822 126 11785	47pF	5%	50V
2883 ©	3198 017 44740	470nF	20%	10V
2884 ©	3198 017 44740	470nF	20%	10V
2885 ©	2020 552 94427	100pF	5%	50V
2886 ©	2020 552 94427	100pF	5%	50V
2887 ©	4822 126 13883	220pF	5%	50V
2888©	4822 126 13883	220pF	5%	50V
2889 ©	4822 126 13883	220pF	5%	50V
2890 ©	4822 126 13883	220pF	5%	50V
2891 ©	4822 126 13883	220pF	5%	50V
2892 ©	4822 126 11785	47pF	5%	50V
2894 ©	3198 017 34730	47nF	10%	16V
2895 ©	2238 586 59812	100nF	10%	50V
2896 ©	4822 126 13751	47nF	10%	50V
2899	4822 124 11947	10µF	20%	16V

RESISTORS

3801 ©	4822 051 30273	27kΩ	5%	0,06W
3802 ©	4822 051 30273	27kΩ	5%	0,06W
3803 ©	4822 051 30333	33kΩ	5%	0,06W
3804 ©	4822 051 30333	33kΩ	5%	0,06W
3805 ©	4822 051 30333	33kΩ	5%	0,06W
3806 ©	4822 051 30333	33kΩ	5%	0,06W
3807 ©	4822 051 30103	10kΩ	5%	0,06W
3808 ©	4822 051 30103	10kΩ	5%	0,06W
3809 ©	4822 051 30103	10kΩ	5%	0,06W
3810 ©	4822 051 30103	10kΩ	5%	0,06W
3811 ©	4822 051 30103	10kΩ	5%	0,06W
3812 ©	4822 051 30103	10kΩ	5%	0,06W
3813 ©	4822 051 30562	5,6kΩ	5%	0,06W
3814 ©	4822 051 30562	5,6kΩ	5%	0,06W
3815 ©	4822 051 30562	5,6kΩ	5%	0,06W
3816 ©	4822 051 30562	5,6kΩ	5%	0,06W
3817 ©	4822 051 30479	47Ω	5%	0,06W
3818 ©	4822 051 30479	47Ω	5%	0,06W
3819 ©	4822 051 30479	47Ω	5%	0,06W
3820	4822 052 10478	4,7Ω	5%	NFR25
3821 ©	4822 117 12917	1Ω	5%	0,06W
3822 ©	4822 051 30103	10kΩ	5%	0,06W
3823 ©	4822 051 30102	1kΩ	5%	0,06W
3824 ©	4822 051 30474	470kΩ	5%	0,06W
3825 ©	4822 051 30393	39kΩ	5%	0,06W
3826 ©	5322 117 13019	100kΩ	1%	0,06W
3827 ©	5322 117 13056	8,2kΩ	1%	0,06W
3828 ©	5322 117 13037	2,2kΩ	1%	0,06W
3829 ©	4822 051 30121	120Ω	5%	0,06W
3830 ©	4822 051 30471	470Ω	5%	0,06W
3831 ©	4822 051 30471	470Ω	5%	0,06W
3832 ©	4822 051 30471	470Ω	5%	0,06W
3833 ©	4822 051 20121	120Ω	5%	0,1W
3835 ©	4822 051 30103	10kΩ	5%	0,06W
3836 ©	4822 051 30223	22kΩ	5%	0,06W
3837 ©	4822 051 30471	470Ω	5%	0,06W
3839 ©	4822 051 30471	470Ω	5%	0,06W
3840 ©	4822 117 13632	100kΩ	1%	0,06W
3841 ©	4822 051 30333	33kΩ	5%	0,06W
3842	4822 116 81154	2,2Ω	5%	0,5W
3844 ©	4822 051 30101	100Ω	5%	0,06W
3845 ©	4822 051 30471	470Ω	5%	0,06W
3846 ©	4822 051 30153	15kΩ	5%	0,06W
3847 ©	4822 051 30153	15kΩ	5%	0,06W
3848 ©	4822 051 30153	15kΩ	5%	0,06W

RESISTORS

3849 ©	4822 051 30471	470Ω	5%	0,06W
3850 ©	4822 051 30183	18kΩ	5%	0,06W
3851 ©	4822 117 13632	100kΩ	1%	0,06W
3852 ©	4822 051 20008	CHIP JUMPER 0805		
3853 ©	4822 051 20008	CHIP JUMPER 0805		
3854 ©	4822 117 13632	100kΩ	1%	0,06W
3855 ©	4822 051 30333	33kΩ	5%	0,06W
3856 ©	4822 051 30123	12kΩ	5%	0,06W
3858 ©	4822 051 30103	10kΩ	5%	0,06W
3859 ©	4822 051 30103	10kΩ	5%	0,06W
3860 ©	4822 051 30479	47Ω	5%	0,06W
3861	4822 052 10228	2,2Ω	5%	0,33W
3863 ©	4822 117 12903	1,8kΩ	1%	0,06W
3866 ©	4822 117 13608	4,7Ω	5%	0,06W
3869 ©	4822 051 30123	12kΩ	5%	0,06W
3871 ©	4822 051 30123	12kΩ	5%	0,06W
3872 ©	4822 051 30101	100Ω	5%	0,06W
3878 ©	4822 051 30471	470Ω	5%	0,06W
3879 ©	4822 117 12902	8,2kΩ	1%	0,06W
3880 ©	4822 051 30339	33Ω	5%	0,06W
3881 ©	4822 051 30151	150Ω	5%	0,06W
3882 ©	4822 051 30682	6,8kΩ	5%	0,06W
3887 ©	4822 051 30153	15kΩ	5%	0,06W
3889 ©	4822 051 30471	470Ω	5%	0,06W
3890 ©	4822 051 30471	470Ω	5%	0,06W
3891 ©	4822 117 12925	47kΩ	1%	0,06W
3892 ©	4822 117 12925	47kΩ	1%	0,06W
3895 ©	4822 051 30333	33kΩ	5%	0,06W
3896 ©	4822 051 30101	100Ω	5%	0,06W
3897 ©	4822 051 30333	33kΩ	5%	0,06W
3898 ©	4822 051 30181	180Ω	5%	0,06W
3899 ©	4822 051 30103	10kΩ	5%	0,06W
3900 ©	4822 051 30101	100Ω	5%	0,06W
3901 ©	4822 051 30561	560Ω	5%	0,06W
3902 ©	4822 117 12968	820Ω	5%	0,06W
3903 ©	4822 051 30222	2,2kΩ	5%	0,06W
3904 ©	4822 051 30222	2,2kΩ	5%	0,06W
3905 ©	4822 051 30471	470Ω	5%	0,06W
3906 ©	4822 051 30471	470Ω	5%	0,06W
3907 ©	4822 051 30391	390Ω	5%	0,06W
3908 ©	4822 051 30222	2,2kΩ	5%	0,06W
3909 ©	5322 117 13019	100kΩ	1%	0,06W
3910 ©	4822 051 30471	470Ω	5%	0,06W
3916 ©	4822 051 30471	470Ω	5%	0,06W
3917 ©	4822 117 12971	15Ω	5%	0,06W
3918 ©	4822 051 30471	470Ω	5%	0,06W
3919 ©	4822 051 20471	470Ω	5%	0,1W
3920 ©	4822 051 30471	470Ω	5%	0,06W
3921 ©	4822 051 30471	470Ω	5%	0,06W
3924 ©	4822 117 11373	100Ω	1%	0,1W
3925 ©	4822 051 30101	100Ω	5%	0,06W
3927 ©	4822 051 30181	180Ω	5%	0,06W
3928 ©	4822 051 30181	180Ω	5%	0,06W
3930 ©	4822 051 30223	22kΩ	5%	0,06W
3931 ©	4822 051 30223	22kΩ	5%	0,06W
3932 ©	4822 051 30223	22kΩ	5%	0,06W
3933 ©	4822 051 30223	22kΩ	5%	0,06W
3934 ©	4822 051 30471	470Ω	5%	0,06W
3936 ©	4822 051 30103	10kΩ	5%	0,06W
3937 ©	4822 051 30103	10kΩ	5%	0,06W
3939 ©	4822 051 30479	47Ω	5%	0,06W
3940 ©	4822 051 30103	10kΩ	5%	0,06W
3941 ©	4822 051 30103	10kΩ	5%	0,06W

RESISTORS

3942 ©	4822 051 30103	10kΩ	5%	0,06W
3948 ©	4822 051 30103	10kΩ	5%	0,06W
3949 ©	4822 051 30103	10kΩ	5%	0,06W
3950 ©	4822 051 30103	10kΩ	5%	0,06W
3951 ©	4822 051 30103	10kΩ	5%	0,06W
3954 ©	4822 051 30102	1kΩ	5%	0,06W
3955 ©	4822 051 30102	1kΩ	5%	0,06W
3956 ©	4822 051 30102	1kΩ	5%	0,06W
3957 ©	4822 051 30102	1kΩ	5%	0,06W
3960 ©	4822 117 11373	100Ω	1%	0,1W
3962 ©	4822 117 12925	47kΩ	1%	0,06W
3963 ©	4822 117 12925	47kΩ	1%	0,06W
3965 ©	4822 051 30101	100Ω	5%	0,06W
3966 ©	4822 051 30101	100Ω	5%	0,06W
3967 ©	4822 117 12925	47kΩ	1%	0,06W
3968	4822 052 10228	2,2Ω	5%	0,33W
3969 ©	4822 051 30103	10kΩ	5%	0,06W
3970 ©	4822 051 30102	1kΩ	5%	0,06W
3971 ©	4822 051 30103	10kΩ	5%	0,06W
3998 ©	4822 051 30102	1kΩ	5%	0,06W
3999 ©	4822 051 30102	1kΩ	5%	0,06W
4804 ©	4822 051 30008	CHIP JUMPER 0603		
4806 ©	4822 051 30008	CHIP JUMPER 0603		
4811 ©	4822 051 30008	CHIP JUMPER 0603		
4812 ©	4822 051 20008	CHIP JUMPER 0805		
4813 ©	4822 051 20008	CHIP JUMPER 0805		
4814 ©	4822 051 30008	CHIP JUMPER 0603		
4815 ©	4822 051 20008	CHIP JUMPER 0805		
4816 ©	4822 051 20008	CHIP JUMPER 0805		
4817 ©	4822 051 20008	CHIP JUMPER 0805		
4818 ©	4822 051 20008	CHIP JUMPER 0805		
4819 ©	4822 051 20008	CHIP JUMPER 0805		
4820 ©	4822 051 20008	CHIP JUMPER 0805		
4821 ©	4822 051 20008	CHIP JUMPER 0805		
4822 ©	4822 051 20008	CHIP JUMPER 0805		
4823 ©	4822 051 30008	CHIP JUMPER 0603		
4824 ©	4822 051 20008	CHIP JUMPER 0805		
4825 ©	4822 051 30008	CHIP JUMPER 0603		
4826 ©	4822 051 20008	CHIP JUMPER 0805		
4827 ©	4822 051 30008	CHIP JUMPER 0603		
4828 ©	4822 051 20008	CHIP JUMPER 0805		
4829 ©	4822 051 30008	CHIP JUMPER 0603		
4830 ©	4822 051 20008	CHIP JUMPER 0805		
4831 ©	4822 051 20008	CHIP JUMPER 0805		
4832 ©	4822 051 30008	CHIP JUMPER 0603		
4833 ©	4822 051 30008	CHIP JUMPER 0603		
4834 ©	4822 051 30008	CHIP JUMPER 0603		
4835 ©	4822 051 30008	CHIP JUMPER 0603		
4836 ©	4822 051 20008	CHIP JUMPER 0805		
4837 ©	4822 051 20008	CHIP JUMPER 0805		
4838 ©	4822 051 20008	CHIP JUMPER 0805		
4839 ©	4822 051 20008	CHIP JUMPER 0805		
4840 ©	4822 051 30008	CHIP JUMPER 0603		
4841 ©	4822 051 20008	CHIP JUMPER 0805		
4842 ©	4822 051 20008	CHIP JUMPER 0805		
4844 ©	4822 051 20008	CHIP JUMPER 0805		

COILS

1810	4822 242 73557	CERAMIC RES. 8,46MHz

ELECTRICAL PARTSLIST CD MODULE MP3 Version

DIODES

6880 ©	9340 548 52115	BZX284-C5V1
6881 ©	9322 129 34685	BZX284-C3V9
6882 ©	9340 548 42115	PDZ 2,4B

TRANSISTORS

7803 ©	5322 130 60159	BC846B
7875 ©	5322 130 60159	BC846B
7877 ©	5322 130 60159	BC846B
7878 ©	5322 130 60159	BC846B
7879 ©	5322 130 60123	BC807-40
7881 ©	5322 130 60159	BC846B
7884 ©	5322 130 60159	BC846B
7885 ©	5322 130 60159	BC846B
7886 ©	5322 130 60159	BC846B

INTEGRATED CIRCUITS

7800 ©	9352 641 80557	SAA7324H/M2B,"CD10" SIGN.PROC.
7801 ©	9322 158 56682	M63000SP, MOTOR DRIVER
7802	4822 209 62059	TCA0372DP1, 2-FOLD OP-AMP.
7811 ©	5322 209 82941	LM358D, Dual Opamp
7883 ©	5322 209 11306	HEF4094BT, SHIFT REGISTER
7887 ©	4822 209 33165	TDA1308T/N1

ELECTRICAL PARTSLIST MP3 Board

MISCELLANEOUS

	3103 308 67020	**MP3CD2002 Module**
1451	2422 025 17303	FLEX FOIL CONNECTOR 19P

CAPACITORS

2450 ©	2238 586 59812	100nF	10%	50V
2451 ©	3198 017 41050	1µF	20%	10V
2452 ©	3198 017 41050	1µF	20%	10V
2453 ©	2238 586 59812	100nF	10%	50V
2454 ©	2238 586 59812	100nF	10%	50V
2455 ©	2238 586 59812	100nF	10%	50V
2456 ©	2238 586 59812	100nF	10%	50V
2457 ©	5322 126 11583	10nF	10%	63V
2458 ©	5322 126 11583	10nF	10%	63V
2459 ©	3198 017 41050	1µF	20%	10V
2460 ©	2238 586 59812	100nF	10%	50V
2461 ©	4822 124 81059	220µF	20%	4V
2462 ©	3198 017 41050	1µF	20%	10V
2463 ©	3198 017 41050	1µF	20%	10V
2464 ©	2238 586 59812	100nF	10%	50V
2465 ©	2238 586 59812	100nF	10%	50V
2466 ©	2238 586 59812	100nF	10%	50V
2467 ©	3198 017 41050	1µF	20%	10V
2468 ©	3198 017 41050	1µF	20%	10V
2469 ©	2238 586 59812	100nF	10%	50V
2470 ©	2238 586 59812	100nF	10%	50V
2471 ©	2238 586 59812	100nF	10%	50V

RESISTORS

3449 ©	4822 051 30101	100Ω	5%	0,06W
3450 ©	4822 117 12971	15Ω	5%	0,06W
3451 ©	4822 117 12971	15Ω	5%	0,06W
3452 ©	4822 051 30101	100Ω	5%	0,06W
3453 ©	4822 051 30109	10Ω	5%	0,06W
3454 ©	4822 117 12971	15Ω	5%	0,06W
3455 ©	4822 051 30102	1kΩ	5%	0,06W
3456 ©	4822 051 30102	1kΩ	5%	0,06W
3457 ©	5322 117 13051	680Ω	1%	0,063W
3458 ©	5322 117 13061	180Ω	1%	0,063W
3459 ©	4822 051 30221	220Ω	5%	0,06W
3460 ©	4822 051 30102	1kΩ	5%	0,06W
3461 ©	4822 051 30479	47Ω	5%	0,06W
3462 ©	4822 051 30101	100Ω	5%	0,06W
3463 ©	4822 051 30101	100Ω	5%	0,06W

ELECTRICAL PARTSLIST MP3 Board

TRANSISTORS

7452 ©	3198 010 42310	BC847BW
7453 ©	3198 010 42310	BC847BW
7456 ©	3198 010 42310	BC847BW
7460 ©	3198 010 42310	BC847BW

INTEGRATED CIRCUITS

7450 ©	not available	please order complete MP3 module
7451 ©	not available	please order complete MP3 module
7455 ©	4822 209 17108	LM317LD Voltage Regulator
7457 ©	9352 456 50115	HC1G04, Inverter
7458 ©	9322 130 41668	M24C64, EEPROM
	3103 308 67020	**MP3CD2002 Module**

RESISTORS

3464 ©	4822 051 30103	10kΩ	5%	0,06W
3465 ©	4822 051 30101	100Ω	5%	0,06W
3466 ©	4822 051 30471	470Ω	5%	0,06W
3467 ©	4822 051 30103	10kΩ	5%	0,06W
3468 ©	4822 051 30103	10kΩ	5%	0,06W
3469 ©	4822 051 30101	100Ω	5%	0,06W
3470 ©	4822 117 12971	15Ω	5%	0,06W
3471 ©	4822 051 30339	33Ω	5%	0,06W
3472 ©	4822 051 30154	150kΩ	5%	0,06W
3473 ©	4822 117 13632	100kΩ	1%	0,06W
3474 ©	4822 117 12971	15Ω	5%	0,06W
3475 ©	4822 051 30101	100Ω	5%	0,06W
3476 ©	4822 051 30101	100Ω	5%	0,06W
3477 ©	4822 051 30471	470Ω	5%	0,06W
3478 ©	4822 051 30471	470Ω	5%	0,06W
3479 ©	4822 051 30471	470Ω	5%	0,06W
3480 ©	4822 051 30101	100Ω	5%	0,06W
3481 ©	4822 051 30101	100Ω	5%	0,06W
3482 ©	4822 051 30471	470Ω	5%	0,06W
3483 ©	4822 051 30101	100Ω	5%	0,06W
3484 ©	4822 117 12971	15Ω	5%	0,06W
3486 ©	4822 051 30101	100Ω	5%	0,06W
3488 ©	4822 117 13632	100kΩ	1%	0,06W
3489 ©	4822 051 30103	10kΩ	5%	0,06W
3490 ©	4822 051 30101	100Ω	5%	0,06W
3491 ©	4822 051 30479	47Ω	5%	0,06W
3492 ©	4822 051 30105	1MΩ	5%	0,06W
3493 ©	4822 051 30103	10kΩ	5%	0,06W
3494 ©	4822 051 30103	10kΩ	5%	0,06W
3495 ©	4822 051 30103	10kΩ	5%	0,06W
3497 ©	4822 051 30103	10kΩ	5%	0,06W
3498 ©	4822 051 30332	3,3kΩ	5%	0,06W
3499 ©	4822 051 30103	10kΩ	5%	0,06W
4450 ©	4822 051 30008	CHIP JUMPER 0603		

COILS

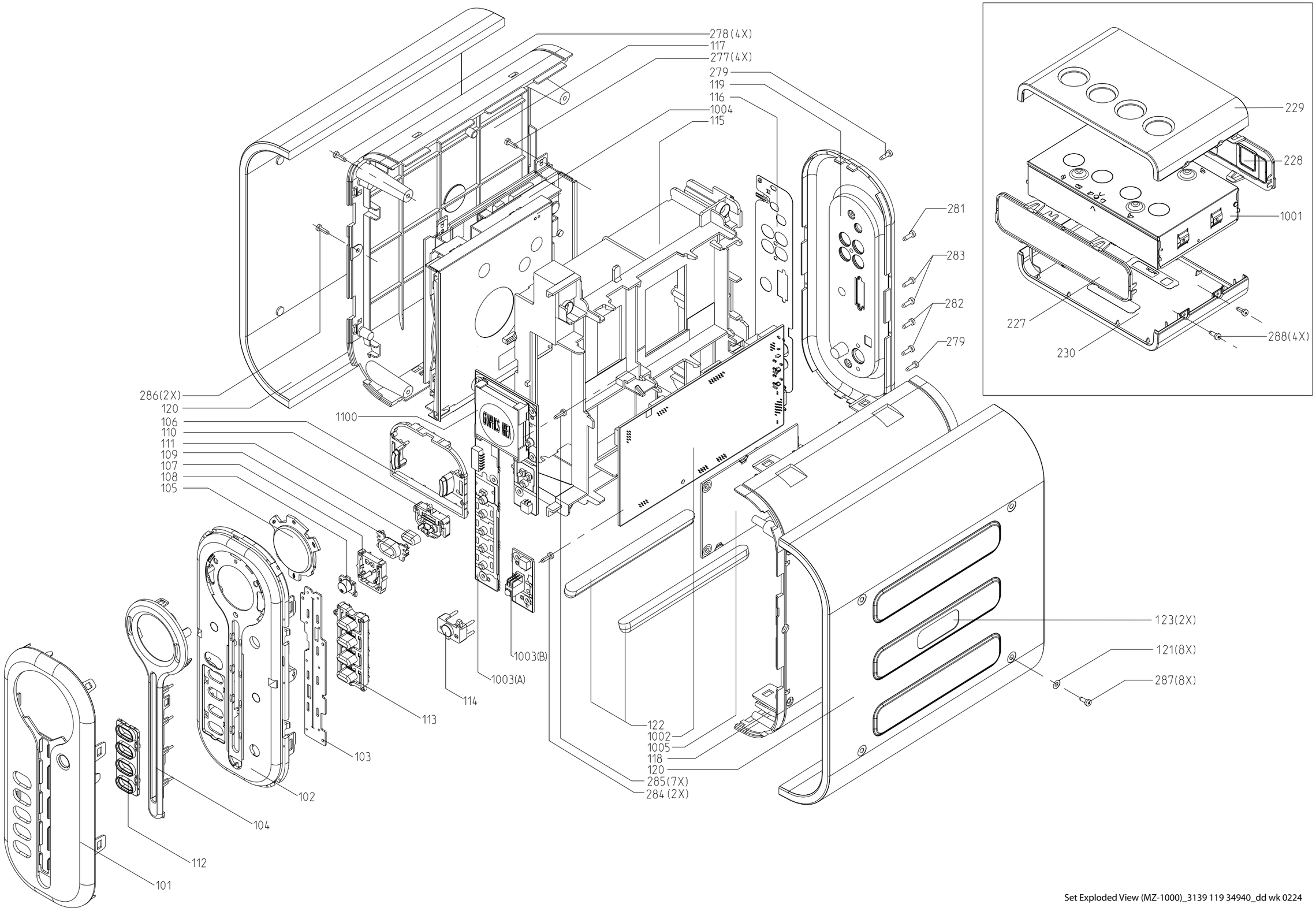
1460	4822 242 10989	CER.RES. 16,9MHz
5450 ©	4822 157 11074	100µH

DIODES

6450 ©	4822 130 11411	BZX284-C3V3
6451 ©	4822 130 11366	BZX284-C3V9
7454	4822 130 34174	BZX79-B4V7

11-1

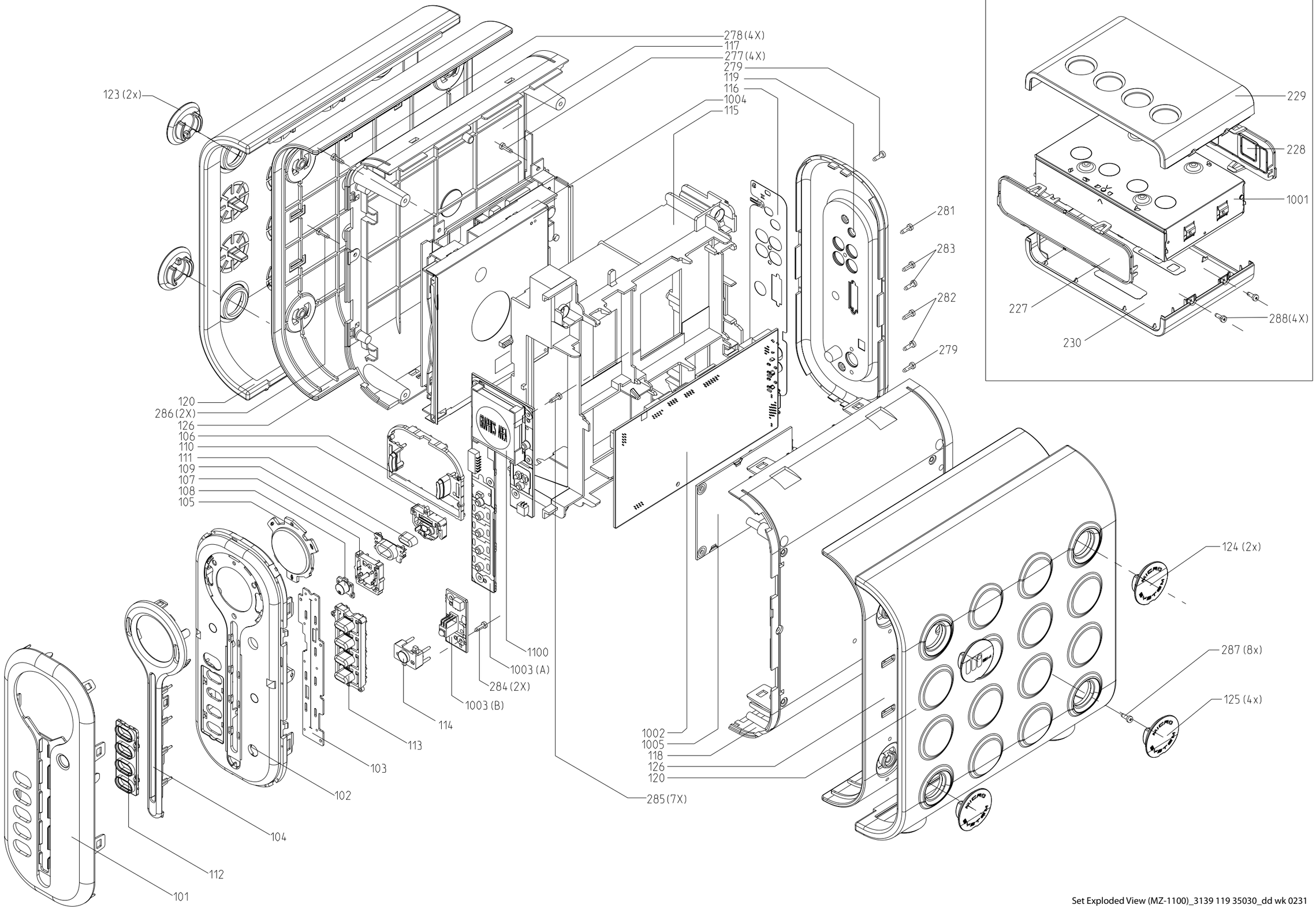
SET MECHANICAL EXPLODED VIEW (MZ-1000)



Set Exploded View (MZ-1000)_3139 119 34940_dd wk 0224

11-2

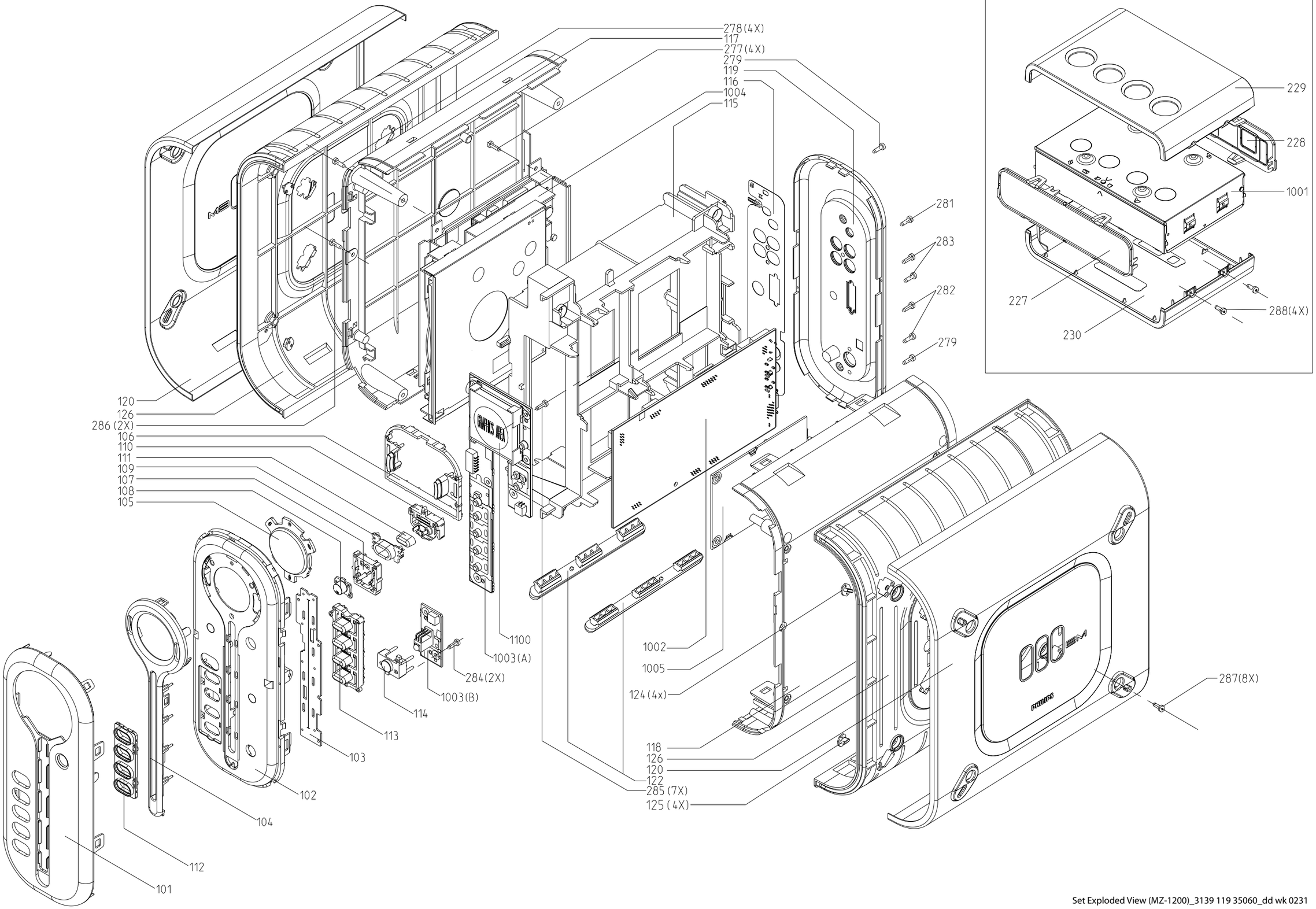
SET MECHANICAL EXPLODED VIEW (MZ-1100)



Set Exploded View (MZ-1100)_3139 119 35030_dd wk 0231

11-3

SET MECHANICAL EXPLODED VIEW (MZ-1200)



Set Exploded View (MZ-1200)_3139 119 35060_dd wk 0231

11-4

MECHANICAL & ACCESSORIES PARTS LIST

MZ-1000/22

0101	3139 118 18470		Cover Orn Front
0102	3139 114 76440		Cover Internal Front
0103	3139 113 10610		Dust Protect CD Slot
0104	3139 118 18530		Chute CD
0105	3139 114 76500		Window Display
0106	3139 118 18440		Button Volume
0107	3139 114 76470		Button Power
0108	3139 118 18450		Cap Button Power Chrome
0110	3139 114 76510		Button Source
0111	3139 118 18540		Cap Button Source
0112	3139 118 18520		Ring Button Function Chrome
0113	3139 118 18460		Button Function
0114	3139 114 76540		Window IR
0115	3139 114 76400		Bracket Slot Loader Tohei
0117	3139 114 76420		Cladding Internal Left
0118	3139 114 76430		Cladding Internal Right
0119	3139 118 18430		Cover Orn Rear
0120	3139 118 18480		Cladding Orn Side
0121	3139 114 76640		Washer Side
0122	3139 113 27380		Foot Rubber
0123	3139 113 27400		Pad Orn Side
0227	3139 118 18550		Cabinet Front Power Box
0228	3139 114 76681		Cabinet Rear Power Box
0229	3139 118 18510		Cabinet Top Power Box
0230	3139 114 76610		Cabinet Bottom Power Box
0287	3139 110 40670		Screw Soc Hex (D4 x 14)
0350	3139 119 00100		Left & Right Loudspeaker Box
0351	4822 303 50063		FM Aerial
0356	3139 119 00080		Remote Control
0383	3139 119 00160		Antenna Telescopic
0384	2422 549 45067		Antenna AM Loop
0385	2422 070 98151	⚠	Mains Cord
0386	3139 111 01620		Cable Intercon 20P
0387	3139 115 21640		Instruction For Use
1100	3139 118 79950		LCD Module
1200	3139 111 01590		FFC Foil 9P/220/9P BD Fold
1201	3139 111 01600		FFC Foil 8P/220/8P BD Fold
1202	3139 111 01610		FFC Foil 4P/060/4P BD
1203	3139 110 34900		FFC Foil 15P/120/15P BD

Note : Only the parts mentioned in this list are normal service spare parts.

MZ-1100/22

0101	3139 118 18730		Cover Orn Front
0102	3139 114 76440		Cover Internal Front
0103	3139 113 10610		Dust Protect CD Slot
0104	3139 118 18680		Chute CD
0105	3139 114 76500		Window Display
0106	3139 118 18690		Button Volume
0107	3139 114 76470		Button Power
0108	3139 118 18450		Cap Button Power Chrome
0110	3139 114 76510		Button Source
0111	3139 118 18540		Cap Button Source
0112	3139 118 18520		Ring Button Function Chrome
0113	3139 118 18670		Button Function
0114	3139 114 76540		Window IR
0115	3139 114 76400		Bracket Slot Loader Tohei
0117	3139 114 76420		Cladding Internal Left
0118	3139 114 76430		Cladding Internal Right
0119	3139 118 18430		Cover Orn Rear
0120	3139 113 27420		Cladding Rubber
0123	3139 118 18720		Plug Rubber
0124	3139 113 27470		Plug Rubber Top
0125	3139 113 27460		Plug Rubber Bottom
0126	3139 114 76820		Cladding Support
0227	3139 118 18550		Cabinet Front Power Box
0228	3139 114 76681		Cabinet Rear Power Box
0229	3139 118 18510		Cabinet Top Power Box
0230	3139 114 76610		Cabinet Bottom Power Box
0287	3139 110 40670		Screw Soc Hex (D4 x 14)
0350	3139 119 00110		Left & Right Loudspeaker Box
0351	4822 303 50063		FM Aerial
0356	3139 119 00080		Remote Control
0383	3139 119 00160		Antenna Telescopic
0384	2422 549 45067		Antenna AM Loop
0385	2422 070 98151	⚠	Mains Cord
0386	3139 111 01620		Cable Intercon 20P
0387	3139 115 21820		Instruction For Use
1100	3139 119 00330		LCD Module
1200	3139 111 01590		FFC Foil 9P/220/9P BD Fold
1201	3139 111 01600		FFC Foil 8P/220/8P BD Fold
1202	3139 111 01610		FFC Foil 4P/060/4P BD
1203	3139 110 34900		FFC Foil 15P/120/15P BD

Note : Only the parts mentioned in this list are normal service spare parts.

MZ-1200/22

0101	3139 118 18660		Cover Orn Front
0102	3139 114 77500		Cover Internal Front
0103	3139 113 10610		Dust Protect CD Slot
0104	3139 118 18680		Chute CD
0105	3139 114 76500		Window Display
0106	3139 118 18690		Button Volume
0107	3139 114 76470		Button Power
0108	3139 118 18450		Cap Button Power Chrome
0110	3139 114 76510		Button Source
0111	3139 118 18540		Cap Button Source
0112	3139 118 18520		Ring Button Function Chrome
0113	3139 118 18670		Button Function
0114	3139 114 76540		Window IR
0115	3139 114 76400		Bracket Slot Loader Tohei
0117	3139 114 76890		Cladding Internal Left
0118	3139 114 76900		Cladding Internal Right
0119	3139 118 18770		Cover Orn Rear
0120	3139 118 18700		Cladding Aluminium
0122	3139 113 27450		Foot Rubber
0124	3139 114 76860		Plug Orn Top
0125	3139 114 76870		Plug Orn Bottom
0126	3139 118 18710		Cladding Support
0227	3139 118 19010		Cabinet Front Power Box
0228	3139 114 77470		Cabinet Rear Power Box
0229	3139 118 19030		Cabinet Top Power Box
0230	3139 114 77490		Cabinet Bottom Power Box
0287	3139 110 40670		Screw Soc Hex (D4 x 14)
0350	3139 119 00120		Left & Right Loudspeaker Box
0351	4822 303 50063		FM Aerial
0356	3139 119 00080		Remote Control
0383	3139 119 00160		Antenna Telescopic
0384	2422 549 45067		Antenna AM Loop
0385	2422 070 98151	⚠	Mains Cord
0386	3139 111 01620		Cable Intercon 20P
0387	3139 115 21760		Instruction For Use
1100	3139 119 00320		LCD Module
1200	3139 111 01590		FFC Foil 9P/220/9P BD Fold
1201	3139 111 01600		FFC Foil 8P/220/8P BD Fold
1202	3139 111 01610		FFC Foil 4P/060/4P BD
1203	3139 110 34900		FFC Foil 15P/120/15P BD

Note : Only the parts mentioned in this list are normal service spare parts.

SCREW LISTS

277	D3 x 10
278	D3 x 10
279	D3 x 10
281	D3 x 10
282	D3 x 10
283	M2,6 x 12
284	D3 x 10
285	D3 x 10
286	D3 x 10
288	M3 x 10